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Proper Nouns and Pronouns

The production of referential expressions in narrative discourse

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Proper nouns and pronouns

The production of referential expressions in narrative discourse

Eigennamen en Pronomina
De productie van referentiële uitdrukkingen in narratieve teksten

Proefschrift

ter verkrijging van de graad van doctor
aan de Universiteit van Tilburg,
op gezag van de rector magnificus,
prof. dr. F.A. van der Duyn Schouten,
in het openbaar te verdedigen
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door

Sarah Maria Karmijn van Vliet

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To the memory of Josine E. de Bruyn Kops

Contents

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Chapter 1
Introduction

1.1 The use of referential expressions in narrative discourse

This study addresses the phenomenon of reference maintenance in discourse: throughout the study I will focus on consecutive reference to protagonists in narratives. More specifically, I will investigate the conceptual, discourse-structural, and linguistic factors that determine a narrator's referential choices during the production of Dutch written narrative discourse.

In discourse, speakers and writers use various means to refer to people and things: a single conceptualized person, for example, can be referred to using various types of referential expression. Consider the following sentences:

(1) a. *A girl in a red coat* just left a message for you at the counter
b. *The girl you were just talking to* left a message for you at the counter
c. *That girl over there* left a message for you at the counter
d. *This girl* just left a message for you at the counter
e. *The girl* left a message for you at the counter
f. *Zadie Smith* left a message for you at the counter
g. *Zadie* left a message for you at the counter
h. *The 24-years old best-selling novelist from North London* left a message for you
i. *She* left a message for you at the counter
j. ***She*** left a message for you at the counter
k. *She* wrote a message for you and Ø left it at the counter

The italicized noun phrases in these sentences can all be used for reference to the same person, the author *Zadie Smith*, depending on the context in which the sentence is uttered. Let me describe just a few of the different contexts: Sentence (a) may be uttered by a person who does not know or recognize the author, but saw her deliver a message and subsequently reports it to the addressee. Example (c) may be used when the referent Zadie Smith is unknown to the discourse participants but still in their vicinity, that is, within the physical context of the discourse. A sentence like (g) may be used for example in a situation in which the discourse participants are familiar or even friends with the author. Sentence (i) can be used when the author is currently the topic of a conversation between the discourse participants, in a sequence like: *I just saw Zadie Smith leaving the building. She left a message for you at the counter.* As the examples show, the various types of referential

expressions used in different contexts range from elaborate relative clause NPs to pronouns or zero anaphora.

In narrative discourse, narrators may refer to characters in various ways. In fact, it is very common for characters to be consecutively coded by different types of referential expressions, at different points during the discourse. Let me give a few brief examples: In the following excerpt from a short story the narrator uses both full NPs (proper nouns) and pronouns in reference to the protagonist (in this and the following examples, target references are given in **bold** or in *italics*):

(2) **MYERS** was traveling through France in a first-class rail car on **his** way to visit ***his*** *son* in Strasbourg, who was a student at the university there. **He** hadn't seen *the boy* in eight years. There had been no phone calls between them during this time, not even a postcard since **Myers** and *the boy*'s mother had gone their separate ways – *the boy* staying with her. The final break-up was hastened along, **Myers** always believed, by *the boy*'s malign interference in their personal affairs.
(RC.TC: 47)[1]

As you can see in the example above, the main character (in bold) is introduced by a full nominal phrase (a proper noun), followed by pronominal references, in turn followed by the resumption of full nominal reference. Also note that reference to a *secondary* character, in the same excerpt (in italics), is maintained through the continued use of definite full NPs.

Instead of using full NPs (proper nouns) and pronouns, narrators may also use an alternative description to refer to a character. Take the following example from a children's book by Roald Dahl (Preceding this excerpt is a passage in which the parents of four year old James Henry Trotter are eaten up by an angry rhinoceros):

(3) Now this, as you can well imagine, was a rather nasty experience for two such gentle parents. But in the long run it was far nastier for *James* than it was for them. Their troubles were all over in a jiffy; they were dead and gone in thirty-five seconds flat. ***Poor James,*** on the other hand, was still very much alive, and all at once, *he* found himself alone and frightened in a vast unfriendly world. (RD.JGP: 7)

Consider another example from a Roald Dahl story, in which little George is referred to by pronouns:

(4) Oh, how ***he*** hated Grandma! ***He*** really *hated* [italics in original] that horrid old witchy woman (RD.GMM: 12)

[1] Examples taken from popular and literary fiction are labelled by abbreviations. The sources are listed in the references section.

In the first sentence, it seems as if we hear George's voice rather than the narrator's. Nevertheless, the narrator is not *quoting* the main character, but refers to him with the third person pronoun *he*. Notice that in this sentence involving the character's 'voice', the use of the proper name, *George*, would sound somewhat awkward.

So far we have seen that when speakers / writers refer to characters or other referents in discourse, they may do so using various types of referential expression types, such as (in)definite NPs, proper nouns, demonstrative NPs, pronouns or zeroes.

Throughout this work we will find that in narrative discourse, reference to *protagonists* typically displays what I will call a *proper noun / pronoun alternation*. Also in colloquial, non-literary narratives, topical characters are often either explicitly referred to by means of full descriptions (mostly proper names), or coded by less informative forms such as pronouns (or zero forms). This alternation can be illustrated by the following (attested) narrative text[2]:

(5)
(a) De zomervakantie is in zicht.
The summer holidays are coming
(b) *Maartje* heeft een idee
***Maartje** has an idea*
(c) en Ø wil niet gestoord worden.
*and **Ø** doesn't want to be interrupted*
(d) *Ze* wil een draak ineenknutselen
***She** wants to fabricate a dragon*
(e) en daar is *ze* urenlang zoet mee.
*Which keeps **her** (subject) busy for hours on end.*
(f) Nu moet de draak nog geschilderd worden
Now the dragon has to be painted
(g) en dan is hij af.
and then it is finished.
(h) Ziezo, de draak is klaar.
There it is, the dragon is finished.

(i) De vakantie is eindelijk begonnen
The holidays have finally started
(j) en *Maartje* gaat op stap met haar nieuwe draak.
*and **Maartje** goes out with her new dragon*
(k) *Ze* wil de mensen laten schrikken
***She** wants to give the people a scare*
(l) en Ø hangt haar draak voor het raam van een huis.
*And **Ø** puts up her dragon in front of a window*
(m) De man die binnen in het huis ligt te slapen,

[2] This excerpt is based on one of the texts from the elicited corpus (cf. chapter 4), slightly adapted for expository purposes.

The man sleeping inside the house
(n) begrijpt niet wat er aan de hand is.
Doesn't understand what is going on.
(o) Hij kijkt door het raam
He looks through the window
(p) en Ø(hij) ziet: niemand!
And Ø sees: nobody!
(q) Ondertussen is *Maartje* al lang uit het zicht.
In the meantime, ***Maartje*** *has long since disappeared.*
(r) Enkele dagen later heeft *ze* opnieuw een idee.
A couple of days later, ***she*** *has another idea.*
(...)
(s) *Maartje* is een slim meisje
Maartje *is a clever girl*
(t) En *ze* weet al precies wat *ze* wil gaan doen.
And ***she*** *already knows exactly what* ***she*** *wants to do.*

Now let us take a look at how the narrator refers to the protagonist *Maartje*, throughout the course of her story[3]. The introduction of the character occurs through the explicit mention of her name. After the introduction of the protagonist, the narrator uses pronouns or zeroes, but from time to time she again uses a proper name, *Maartje*, to refer to the protagonist. In other words, at times the narrator *repeats* the proper noun to refer to the main character of the story. Now, is this repetition of the proper noun a random matter, or is it possible to detect some system in this phenomenon?

In this story, repeated explicit reference occurs three times, namely in clause (j) after 7 intervening clauses, then again in clause (q) after 6 clauses, and also in clause (s) in a different part of the same story. Looking at the conceptual content of the story, we can observe that the narrator repeats the protagonist's name at the following points:

(i) In clause (i) the text conveys a shift in time and situation: It is the beginning of the holidays, which represents a change in the situation of the protagonist. This narrative shift in time and circumstances is immediately followed, in the next clause (j), by a repeated proper noun to refer to the protagonist.

(ii) The beginning of the story is all about the main character, Maartje. In clause (m), a new character is introduced in the story, the neighbour. The next few lines are concerned with the situation and experiences of this neighbour, leaving out reference to the protagonist altogether[4]. Four lines later, in clause (q) the story returns to the protagonist; the focus of the story has shifted from

[3] I will use feminine gender to indicate the language producer, i.e. the speaker or writer, and masculine gender for the hearer or reader.
[4] Note that in line 16 'nobody' is an indirect reference to the protagonist: Although the neighbour does not see anyone, the reader is aware that he might or should have seen the protagonist.

the protagonist to another character, and then shifts back to the protagonist; and this character shift is accompanied by the resumption of the proper name.

(iii) In clause (s) the narrator gives us her own interpretation rather than a report of the main character's ongoing activities and the events she is involved in. That is, this so-called *narrator comment* represents a description of a permanent and inherent *property* of the protagonist, which is accompanied by a repeated use of the protagonist's name.

What may strike us when observing this pattern is that, strictly speaking, it does not seem at all necessary to repeat explicit reference to the protagonist. Throughout the story, it should be clear that the narrative revolves around the central character. In addition, ambiguity is ruled out (there is no other female character, so the pronoun *she* cannot but refer to the protagonist). So why repeat the proper name at all? Judging from the idea that only ambiguity needs to be avoided, repeating the proper noun might seem redundant. In the texts shown above, however, the narrators do alternate between using names and pronouns (or zero anaphora) for the main characters in their stories. As we shall see in later chapters, an important role can be ascribed to referent *salience* within the embedding context.

The aim of this study is to explain the patterns of alternating full and attenuated nominals, in consecutive reference to narrative characters, in a cognitively plausible way. The present study focuses on referential choice, i.e. it takes a *production* rather than *comprehension* or *processing* perspective. I will investigate the process of the production of referential expressions, rather than the (more widely investigated) process of anaphora resolution. I will restrict my research mostly to one specific area: *consecutive reference* to *topical characters* in *Dutch written narrative discourse*.

The literature on discourse reference reveals numerous factors that can be associated with the choice of referential form. However, most of the existing research consists of qualitative case studies, and involves carefully edited texts. Most of these studies, that is, are not based on systematic statistical analysis of data collected under maximally controlled experimental conditions. Further, most studies focus on one or two of the many factors that might be assumed to be relevant to referential choice. Not all of them, lastly, involve independently established theories of the representation of discourse.

This study of course builds on important hypotheses and insights offered in the previous literature on discourse reference, and aims to complement the existing literature in a number of ways: by offering statistical analyses of experimentally elicited production data; by considering several factors simultaneously; and by attempting to situate the data within a theoretical framework for nominal categories and narrative representation. In doing so, this study aims to assess the relative influence of several factors affecting referential choice, and to shed light on the linguistic rules and/or knowledge underlying referential choice.

The remainder of this introductory chapter consists of four sections: Section 1.2 briefly presents the theoretical background. In section 1.3 I will describe the set-up and approach of the study; section 1.4 summarizes the main research questions; in section 1.5, lastly, I will present an overview of the contents of chapters 2 through 7.

1.2 A reference point approach to discourse reference

Various studies have described the form and meaning of the different types of referential expression, as well as the mechanisms and conditions of their use and interpretation. The central aim of these reference theories is to account for the form and interpretation of (anaphoric) discourse referents. That is, they attempt to explain (i) the way a speaker introduces a new referent entity into the discourse and the way she subsequently maintains reference to it in the discourse, using various types of referential expression; and (ii) the way a hearer resolves what discourse entity the speaker refers to, and the way he integrates a referential expression into the discourse model.

In most theories of discourse reference, referential form is related to the information status or *cognitive status* of referents (Chafe 1976, 1987, 1994; Givón 1979, 1983; Prince 1981; Ariel 1988, 1990, 2001; Tomlin 1987; Tomlin & Pu 1991; Kibrik 1999; Gundel et al. 1993; Van Hoek 1992, 1995, 1997). That is, in accounting for online referential choice and anaphora resolution, there is an important role for cognitive processing factors such as concept activation, or, the (assumed) accessibility or *salience* of mental representations. The guiding assumptions for the present study are based primarily on a cognitive semantic view of nominal categories in terms of *salience* (Van Hoek 1997). Proper nouns and pronouns, on this view, reflect different degrees of referent salience within the immediate context, as represented in the minds of the discourse participants: A pronoun represents a *high degree of referent salience within the embedding context*, and a proper noun represents a *relatively low degree of referent salience within the context*.

The theoretical approach taken in this study is largely based on a discourse-level application of Van Hoek's (1997) *reference point model of anaphora*. Van Hoek's model, which comprises a conceptual-semantic account of *sentential* anaphora constraints, is expanded so as to account for referential choices at the level of discourse. Within the proposed discourse-level model, nominal entities serve as conceptual *reference points* (cf. also Langacker 1990), against which the surrounding context is to be interpreted. The stretch of context within which a referent is the most salient entity and functions as conceptual reference point is termed a *dominion*.

In the extension of this model to the level of discourse, I present a cognitive semantic characterization of proper noun / pronoun patterns in discourse. I propose the following as the basis for the hypotheses: Throughout the production of narrative discourse, the representation of referents and referent salience within the embedding

context (what Van Hoek (1997) terms *reference point / dominion organization*) keeps track of the evolving relation between topic referents and local context. This organization in turn determines the alternation of full (proper noun) and attenuated (pronominal) reference.

The relation between reference points, dominions and referential choice can be described as follows: As long as the intended referent functions as reference point within the embedding context, a speaker or writer continues to pronominalize the referent; if for some reason the referent is no longer (to be presented as) the central element, or, reference point in the embedding context, the speaker or writer repeats explicit reference, for example by using a proper noun.

It is hypothesized that the extent of a referential dominion, that is, the extent of high referent salience within a certain stretch of discourse context, depends on a number of factors: the topicality of the referent within the entire discourse; the referent's salience within the clause (its syntactic function and its linear position); the linear textual distance to the previous mention of the referent (in terms of the number of intervening words and /or clauses); the presence of intervening referents; the embedding narrative structure; and character perspective. One of the relevant factors, narrative structure, is illustrated below:

> (6) As ***George*** sat there pondering this interesting problem, ***his*** eye fell upon the bottle of Grandma's brown medicine standing on the sideboard. Rotten stuff it seemed to be. Four times a day a large spoonful of it was shovelled into her mouth and it didn't do her the slightest bit of good. She was always just as horrid after she'd had it as she'd been before. The whole point of medicine, surely, was to make a person better. If it didn't do that, then it was quite useless.
>
> *So-ho!* Thought ***George*** suddenly. *Ah-ha! Ho-hum!* I know exactly what I'll do. I shall make her a new medicine, one that is so strong and so fierce and so fantastic it will either cure her completely or blow off the top of her head. I'll make her a *magic medicine*, a medicine no doctor in the world has ever made before.
>
> ***George*** looked at the kitchen clock. It said five past ten. There was nearly an hour left before Grandma's next dose was due at eleven.
>
> 'Here we go, then!' cried ***George***, jumping up from the table. 'A magic medicine it shall be!'
>
> (RD.GMM: 14)

Episode transitions (represented here through paragraphs) involve a conceptual shift in the narrative representation, or, situation model (cf. Zwaan & Radvansky 1998); a change in (one or more) narrative characteristics such as *location, time, cause, character and / or motivation* (ibid.) may close off a referential dominion and trigger the repeated use of a proper noun. The narrator can also *exploit* the reference point principles sketched above, for communicative purposes: continued pronominalization enhances conceptual continuity, whereas repetition of a proper noun emphasizes the discontinuity between consecutive episodes.

The proposed model is tailored specifically to *topic maintenance*, for which proper nouns and pronouns, it is argued, are the typical categories. It does not apply to referents that are 'new' in a discourse (segment), or to cases in which the referring expression itself is used to add information about the referent, as in example (3) above.

The corpus analysis presented in chapters 5 and 6 addresses the extent to which the relevant factors distinguished on the basis of this model indeed underlie the actual referential choices made by narrators in online narrative production.

1.3 Approach and set-up of the study

The present study is conducted within the overall framework of Cognitive Linguistics (Lakoff 1987, Langacker 1987, 1991, Talmy 2000, Fauconnier 1994, Barlow & Kemmer 2000). Research conducted within this framework, which developed in the past two decades, focuses on the relations between language use, language structure, and general cognition.

Given its theoretical orientation, Cognitive Linguistics can be considered closely related to the field of psycholinguistics. Because of the emphasis on a usage-based language system, and on the important role ascribed to general (non-linguistic) cognition, cognitive linguistics naturally lends itself to investigations involving linguistic processing, and to empirical validation through (quantitative) psycholinguistic methods[5]. Pioneers in the field of cognitive linguistics, such as Lakoff (1987) and Langacker (1987, 1991) have largely relied on established linguistic analytical methods. Recent years have witnessed more research in theoretical linguistics employing psycholinguistic methods such as experimentation and corpus analysis (Geeraerts 1999, Verhagen 2005, Goldberg 2006 inter alia). Both analytical and psycholinguistic (quantitative) approaches seem to have their own advantages: Fauconnier (1994) remarks that a qualitative investigation of *extraordinary* cases might bring to light the processes that are *normally* at work in language. Geeraerts (1999) argues that adopting a usage-based framework such as Cognitive Linguistics implies that its methodology needs to include quantitative research methods such as those used in corpus research and psycholinguistic experiments. In my view, the inclusion of both an analytical and a quantitative approach might be an advantage. As Talmy (2005) puts it, "each of the methodologies now being applied to cognitive linguistics has unique capacities that make it necessary for our overall understanding of conceptual structuring in language, as well as having limitations that make the other methodologies additionally necessary for this understanding" (Talmy 2005: 11).

This study is situated at the crossroads of cognitive linguistics and psycholinguistics. I will employ both qualitative and quantitative methods in the

[5] Indeed one of the objections against mainstream generative grammar has been that, although it aims to account for language as a biological and psychological phenomenon, it does not lend itself easily to verification or falsification through empirical psycholinguistic methods, cf. Jackendoff 2007 inter alia.

following way: *Qualitative* analyses are employed for the development of hypotheses concerning usage of proper nouns and pronouns. Using mostly literary examples, I will describe the various factors, listed in 1.2 above, that can be assumed to affect referential choice. These factors will be put to the test in an empirical study of Dutch narrative production. Due to the fact that several factors can be assumed to (simultaneously) influence referential choice, a *quantitative* analysis is especially warranted, in order to assess the relative importance of each of these factors, and to assess whether they cancel each other out. Therefore, two quantitative methods, namely frequency analysis and regression analysis, are used in the analysis of an elicited corpus: I present a frequency analysis of the distribution of referential form relative to the factors at issue (chapter 5); I also present a regression analysis assessing the weight of the individual factors (chapter 6).

In order to obtain relevant production data for the quantitative (frequency and regression) analysis, I elicited a corpus of written Dutch narrative texts. Participants were asked to produce a written narrative on the basis of a series of 25 pictures. The pictures told a children's story about one protagonist involved in several events. Some of the factors assumed to affect referential form - episode boundaries, viewpoint boundaries and perceptual attention shifts - were implemented in the picture series. In this way I obtained a corpus of structurally similar, comparable written narratives.

In the corpus analysis, I investigate the way the relevant factors influence referential choice during the *online production* of written narrative texts. On the basis of the results, it is assessed whether the findings are compatible with the proposed salience-based characterization of the categories proper noun and pronoun. I will also briefly address the production rules or principles that might guide the online selection of referential form. With this study, then, I hope to contribute both to a psycholinguistic model of language production, and to a theoretical model of nominal semantics and pragmatics.

1.4 Research Questions

The research questions that will be central to the present study are as follows:

1. How can we account for the patterns of alternating proper nouns and pronouns in narratives in terms of a conceptual-semantic salience-based characterization of nominal categories? (Chapter 2).
2. Given that this salience-based characterization relates to the embedding context, which conceptual and discourse-structural characteristics of narrative discourse should be distinguished? (Chapter 2)
3. During narrative discourse production, what are the relevant factors for the distribution of proper nouns versus pronouns, referring to topical referents? (Chapter 5). More specifically, what is the (relative) influence of the grammatical and discourse factors listed above? (Chapter 6).

4. Based on the observed factors, is it possible to characterize the linguistic knowledge, rules, and / or communicative strategies that govern the real-time production of proper nouns and pronouns? (Chapter 7).

1.5 Contents overview

In this chapter I have provided an outline of the issues to be addressed in this study. This section briefly describes the contents of chapters 2 through 7.

In **chapter 2** I present the theoretical background to the study. It is hypothesized that referent salience and narrative context can account for the coding of consecutive topic reference in narrative discourse. The chapter consists of the following: (i) it presents discourse referents as mental entities; (ii) it gives a description of the nominal categories proper noun and pronoun in terms of salience; (iii) it presents an overview of Van Hoek's (sentential) reference point model of anaphora (1997); (iv) it presents an extension of this model to the level of discourse, distinguishing a number of grammatical, discourse and narrative structural factors assumed to affect referential anaphoric patterns in narratives; and (v) it provides a description and illustration of these factors, using examples from English fictional narratives. The model presented in this chapter forms the basis of the hypotheses for referential choice in narratives, to be investigated in the corpus study.

Chapter 3 presents the operationalization of the factors assumed to affect referential choice in Dutch written narratives. The relevant factors are all based on a characterization of the nominal categories proper noun and pronoun in terms of referent salience within the context, as proposed in chapter 2. Some of these factors are a rather straightforward application of the discourse level reference point model of anaphora, some are specific to discourse (rather than sentential) contexts, some are based on previous research.

Chapter 4 presents the methodological validation of the research. It describes how the production data have been collected. I will argue that the method used to collect the corpus – elicitation through visual stimuli (comics) – is a valid way of obtaining narrative production data. I will demonstrate that, in the genre of comics, discourse-structural characteristics such as episodic structure can be conveyed through visual means. I will describe the implementation of such factors in the visual stimuli, and the production task of writing narratives on the basis of these visual stimuli.

Chapter 5 addresses the question of which factors are relevant to referential choice (i.e. the first part of research question 3 above). To this end, I present a frequency analysis of the distribution of referential expressions in the collected corpus, focusing on proper nouns and pronouns used in reference to the story protagonist.

First, I present a general characterization of the corpus, establishing the linguistic topic status of the protagonist. The main part of the chapter is concerned with testing a number of hypotheses presented in chapter 3. It presents the distribution of referential form relative to the clause-internal factors syntactic function and linear position; it analyses the discourse-structural factors episode boundaries, viewpoint shifts, and page breaks (reflecting perceptual attention), implemented in the visual stimuli; it also presents a more fine-grained analysis of discourse-structural factors in terms of the situation model parameters *character*, *location* and *time*; the chapter also addresses the hypothesis that repeated proper nouns after episode boundaries may serve the function of signalling the discourse structure (apart from the basic identifying function); lastly, the chapter includes an analysis of referential form relative to degree of character perspective.

Chapter 6 addresses the question of the relative importance of various significant factors in referential choice (i.e. the second part of research question 3 above). It is concerned with *modelling* the proper noun / pronoun alternation. Whereas in chapter 5 I report the observed frequencies of proper nouns and pronouns in different discourse situations, in chapter 6 I present estimations of the individual and combined *contribution* of these factors to the *probability* that a narrator will use a repeated proper noun (rather than a pronoun), through a logistic regression analysis. In this way, several factors that usually co-occur in discourse production can be disentangled. Using a selected part of the collected corpus, I will report the individual and relative effect of the factors referential distance (in words and clauses), episode boundaries, viewpoint shifts, intervening referents, and syntactic function.

Chapter 7 presents the conclusions of the study. I will propose that the salience characteristics of the referential categories *proper noun* and *pronoun*, combined with the conceptual structure of the narrative contexts in which they occur, can explain the observed proper noun / pronoun patterns in consecutive reference to narrative characters. The chapter also offers an outline of a process model of the choice between proper noun and pronoun, involving two basic mechanisms, based on referential distance and discourse structure respectively.

Chapter 2
Reference points and dominions in narratives
A discourse level exploration of the reference point model of anaphora

2.1 Introduction

This chapter forms the theoretical background to the empirical study presented in subsequent chapters. It presents salience as the central notion for topic maintenance, and describes the characteristics in the narrative context which might affect referent salience.

The set-up of the chapter is as follows: Section 2.2 presents the *conceptual* conditions for linguistic reference to discourse entities (following Jackendoff 2002). Section 2.3 presents the *process* conditions for particular *types* of reference: it presents a conceptual-semantic description of the nominal categories proper noun and pronoun, as adopted in Van Hoek (1997). Section 2.3 also presents the reference point model of sentential anaphora constraints, introducing the factors linear order, conceptual connectivity and point of view, which affect referent salience within the clause and which will turn out to play an important role in discourse level anaphora as well. Section 2.4 presents the basic arguments for treating sentence and discourse level anaphora in the same way, and for adopting this particular theory for the development of hypotheses concerning referential patterns in narrative. It also gives a description of the representation of reference points and dominions in narrative discourse. In 2.5, the discourse level factors for referential choice are described and illustrated with examples from English fictional narrative. Section 2.6, lastly, presents the summary of the chapter.

2.2 Discourse referents as mental entities

This section presents the conceptual conditions for our ability to refer to things and persons in real or fictional domains. The attachment of a so-called *indexical feature* to a perceived or conceived entity, which singles out an entity as an individual, is what allows for (consecutive) linguistic reference. Within the context of the present study, the attachment of an indexical feature to perceived or conceived entities allows narrators to produce chains of linguistic reference to a single character in a narrative. In the elicitation task used here (cf. chapter 4), narrators track the protagonist throughout the comic, and the indexical feature is what allows them to

present the protagonist as a single individual throughout the story, even when it is absent in certain pictures, or depicted from a different visual angle.

Both in discourse and in everyday life, people attribute identities to people, animals and things, in very different situations: Take for example the case of seeing, hearing, stroking and talking about one's favourite cat. This involves very different sensory and conceptual processes. Moreover, even within a single modality, the same cat can be seen from very different angles, yielding different and incomplete images. Yet people somehow manage to identify the cat as one and the same 'thing', throughout the course of time. In this section I use Jackendoff's (2002) view of linguistic reference to demonstrate how concepts and percepts give rise to chains of reference in discourse, through the attachment of indexical features to a perceived or conceived object.

As a starting point, I adopt the now widely accepted view that linguistic reference primarily involves the relation between linguistic expressions and mental concepts, rather than the relation between language and reality (the outside world)[1] (Johnson-Laird 1983, Langacker 1987, Jackendoff 2002). As Jackendoff (2002) points out, people often refer to 'objects' that cannot easily be defined as realistic objects in 'the world'. He illustrates this claim by numerous examples: fictional characters such as *Sherlock Holmes*; geographical objects such as *Wyoming*, social entities such as *the value of my watch*; auditorily perceived objects such as *Mahler's Second Symphony*, and virtual objects such as the *square* formed by four dots (cf. figure 1 below). (An extensive review of these and other examples can be found in Jackendoff 2002: 300-3).

Figure 1 (Jackendoff 2002: 301)

These examples illustrate that linguistic expressions refer to *conceptual structures* rather than to objects in the world, independent of the mind.

In what follows I will use Jackendoff's (2002) example of visual perception to illustrate how chains of perception and reference come about. Jackendoff argues that percepts and concepts are linked to an 'index' feature, which in turn enables consecutive verbal reference to it. Jackendoff's (2002: 306) example runs as follows:

(1) Hey, look at that! [*pointing*]

When a speaker utters a sentence such as (1), the understanding of deictic 'that', which contains little descriptive content, involves more than just the linguistic processing of the sentence; the hearer must make use of the visual system in order to

[1] Note that the word *reference* here is used in a different (broader) sense than the notion of discourse reference otherwise used in this chapter (although it of course encompasses discourse reference).

identify the referent. It is not the eyes, however, that identify whatever the speaker is pointing at: The immediate retinal image is sensitive only to stimuli such as colour, contrast, intensity etc; it does not itself distinguish specific objects or object locations. As Jackendoff puts it: "inboard from here it's all computation" (2002: 307): It is the brain that transforms the retinal image to a "percept", a "cognitive/neural structure that distinguishes individuals in the perceived environment and that permits one to attend to one or another of them. One can stop attending to a perceived individual and then return to it; one can track a perceived individual as it moves through the perceived environment and as it changes properties such as orientation, color and shape" (2002:307). What are the crucial features of such a percept, and what makes (repeated) linguistic reference to such a percept possible?

Jackendoff elaborates on the example *Hey, look at that!* by exploring what is involved when *that* refers to a disgusting *bug* that is crawling across the floor. He explains that a percept that the hearer must identify in order to connect the deictic expression to an entity perceived "out there", contains at least the following features: First, the percept contains a number of *descriptive features*. The features of a visual percept such as the one illustrated here consist of size, color, shape, as well as location and motion. The descriptive features are not necessarily visual. In a variant of this example, *Did you hear that?*, the features are auditory. Percepts come in different modalities, such as seeing, hearing, smelling and feeling.

Another important aspect of a percept is that it is perceived as a (moving) *figure* against a surrounding background. The fact that a perceived entity in some way stands out from its perceived surroundings forms the initial basis for building an *indexical feature* of the percept, which 'marks' the percept (or *concept* when it is established through language) as an individual entity: "[the indexical feature] gives the [...]mind a 'something' to which descriptive features can be bound" (Jackendoff 2002: 311). This feature, once established, is no longer dependent on perceptual input, but allows us to further 'track' the entity throughout time; even when it is no longer perceived it is assumed to continue to exist, and can be perceived again, and recognized as the same entity, in any of the existing modalities. The indexical feature, then, is modality-neutral and is used for example in tracking moving percepts, and in identifying percepts or concepts that disappear and re-appear from the focus of (visual, verbal, auditory etc) attention[2].

Jackendoff argues that "[t]he indexical feature of a percept is the crucial feature for linguistic reference" (Jackendoff 2002:314). These indexical features, whether established perceptually or linguistically, are also necessary for *chains* of linguistic *coreference*. A proper name, which denotes an individual, "has an indexical in its associated concept" (Jackendoff 2002: 318). An attenuated expression such as a pronoun does not contain such an indexical feature; a pronoun

[2] An indexical feature can also be split or merged: for example, a single object may break into two or more pieces, or two lumps of clay can be molded together (evoking evolutive referents, cf. Maes 2001). Other characteristics of percepts and concepts, such as its valuation, its classification as self-produced vs not self-produced, meaningful vs not meaningful and familiar vs. novel, are described in Jackendoff 2002: 306-315.

such as *she* merely designates a female animate entity. Nevertheless, an indexical feature should somehow be present in order to produce the pronoun in any meaningful way. The production and interpretation of pronouns is therefore dependent on *context* for the attachment of an indexical feature. As we shall see below, a prerequisite for using such an attenuated expression, which in itself lacks an indexical feature, is that it be highly salient within the current context.

2.3 The reference point model of anaphora

This section presents an overview of Van Hoek's (1995, 1997) sentential *reference point model of anaphora*. Van Hoek's characterization of nominal semantics will be addressed in 2.3.1 below; the constraints on full nominal and pronominal sentential anaphora will be addressed in section 2.3.2.

2.3.1 Nominal Semantics

Whereas the previous section addressed the conceptual prerequisites for linguistic reference, this section discusses the *process* conditions for choosing a particular *type* of referential expression. To this end, this section presents Van Hoek's (1997) semantic characterization of the nominal category, which largely draws on the notion *accessibility* (Ariel 1988), equivalent to Van Hoek's notion *salience*[3].

During the production and comprehension of discourse, attention flows from one focus to the next and concepts continually move into and out of the immediate focus of consciousness (Chafe 1987, 1994; Langacker 2001). Chafe (1994) argues that only a certain amount of information can be 'mentally active' or focused on at a certain time. Therefore, concepts have different activation states in people's minds at different points in the discourse. Linguistic categories respond to these distinctions: referential expression types such as (in)definite nominals, proper nouns and pronouns code information pertaining to the current *mental accessibility* of a discourse entity, as represented in the minds of the discourse participants (Chafe 1987, Ariel 1990 inter alia). The nominal categories *definite full nominal* (including *proper noun*) and *pronoun* code different degrees of referent salience or accessibility: Full nominal expressions such as proper nouns are so-called *low accessibility markers*, i.e. they indicate that the intended referent has a low degree of accessibility. Pronouns, on the other hand, are *high accessibility markers*, in that they indicate that the referent is currently highly accessible.

On this view, the choice of a certain referential expression largely depends on the (assumed) salience of a referent within the current context of use. A recently

[3] Although Van Hoek (1997) adopts Ariel's (1988) notion of *accessibility* in characterizing nominal categories, in her own analyses she mostly uses the equivalent term *salience* (and sometimes, *prominence*). I will therefore also use the term *salience*. The reader should keep in mind however, that these terms can be used interchangeably.

mentioned referent for example is assumed to be in the forefront of the interlocutor's consciousness, and may therefore be accorded a high degree of salience. Therefore, it suffices to use a pronoun to refer to that referent. A referent may also be in the forefront of awareness of the discourse participants due to other, non-linguistic circumstances, witness the following discourse-initial reference to *Saddam Hussein* during a press conference[4]:

(2) Ladies and Gentlemen: We ['ve] got *'em*

At the press conference announcing his capture, the referent *Saddam Hussein* was on everybody's mind, since rumours of his capture were already circulating and it was considered very important news. The pronoun reflects the referent's high salience within the context of the press conference.

Van Hoek (1997) distinguishes another aspect of nominal semantics - one that she characterizes as *analogous* to the notion of salience: full nominals (such as proper nouns) and pronouns differ with respect to the degree of *subjectivity* or *objectivity* they impose on the referent (cf. Langacker 1990). Van Hoek's particular distinction between subjective and objective construal refers to what Langacker (1990) calls the *stage model*, i.e. a model of the discourse situation in which both discourse participants and conceptualised entities differ in the degree to which they are themselves portrayed as 'conceptualizer' (in Langacker's terms), viewer or cognizer of the described situation.

For current purposes, the subjectivity / objectivity distinction in nominals can be described as follows: In perspectivized contexts, a (subjective) pronoun portrays its referent as conceptualizer of the predication of which it is part, whereas an (objective) proper noun portrays its referent as the object of conceptualisation, from an 'outside' perspective, i.e. that of either the narrator or another (secondary) character.

Van Hoek also describes the subjectivity distinctions as follows: "Reference via name implies greater distance between the conceived referent and the [discourse] participants, and a correspondingly more objective conception of the referent. A pronoun portrays the referent as conceptually closer to the discourse participants, and correspondingly as more subjectively construed" (Van Hoek 1997: 219).

As we shall see in section 2.5.7 and in chapter 5, I will relate this notion to the characterization given in Sanders (1994), which offers reliable linguistic criteria for distinguishing ways in which the consciousness of discourse participants as well as embedded characters can be represented in the text.

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[4] Cf. Ariel (1988, 1998) for further discussion on the relevance of referent accessibility / salience rather than the referent's 'geographical context' in explaining referential patterns (geographical context referring to (i) newness or prior mention, (ii) the physical discourse situation or (iii) general knowledge).

2.3.2 Sentential anaphora constraints

Within Van Hoek's reference point model of anaphora, the felicitous use of a coreferential full nominal or pronoun depends on the salience of its referent within the immediate context, which is in turn determined by three factors: conceptual connectivity, linear order, and point of view. In order to plausibly relate (pro)nominal anaphora to the relevant characterization of context, Van Hoek develops a model of semantic relations between nominals, in terms of *reference points* and *dominions*. Reference points function as local topics within a semantic domain, or dominion. A dominion is defined as a *mental space* (Fauconnier 1994), consisting of the (conceptual, non-linguistic) context within which a particular referent is the most salient element. Van Hoek puts it as follows:

> Reference points are elements which are prominent within the discourse and so serve to set up the contexts within which the conceptualizer makes mental contact with other entities. The dominion of a reference point consists of the elements that are conceptually located relative to the reference point, whose construal is shaped by their association with the reference point (Van Hoek 1995: 313).

A pronoun can only be used if there is a salient antecedent that can function as reference point for the interpretation of that pronoun. A full nominal can be used if its immediate context falls outside the dominion of a corresponding reference point. Using a full nominal that necessarily falls *within* the dominion of a corresponding reference point sends the wrong signal concerning the referent's retrievability within the context, preventing an intended coreference reading.

This is illustrated in (3) below: The full nominal *Steve* falls within the dominion of the pronoun *he*, which, as clausal subject, represents the most salient entity and the reference point for the rest of the clause (i.e., with the rest of the clause in its dominion). The full nominal *Steve* can therefore not be interpreted as coreferential to the subject pronoun.

(3) # *He* put the money in *Steve*'s pocket

Drawing on a number of theories of discourse reference (Givón 1983, Ariel 1990 inter alia), Van Hoek describes the *initial* selection of a reference point as follows: "X is likely to be taken as a reference point relative to Y if X is [salient] in the context which includes Y. This reflects the basic nature of a reference point as something which is selected on the basis of salience and used as a starting point from which to make mental contact with other, less salient entities" (Van Hoek 1997: 58).

The representation of a salient nominal within its embedding (sentential) context, demarcating the extent of the domain in which the nominal remains highly salient, (and pronominalized), is what Van Hoek terms *reference point / dominion*

organization. The sentential organization of reference points and dominions depends on the salience of a nominal (its reference point status) and (the strength of) its conceptual-semantic connections with coreferential nominals. Van Hoek distinguishes three factors that shape this organization, once an entity has been selected as reference point: (i) conceptual connectivity; (ii) linear order; and (iii) point of view. These factors determine the extent of a reference point's dominion, within which corresponding referents are necessarily pronominalized. I will now describe these factors in turn.

Conceptual Connectivity

Conceptual connectivity pertains to the strength of relations between nominal elements, be it within a single clause, a sentence or an entire discourse. Van Hoek defines conceptual connectivity as "the extent to which two elements are conceived as participating together in a larger conceptual unit." (Van Hoek 1997: 61). Such units correlate for instance with verb-argument structures, sentences, or paragraphs. The degree of conceptual connectivity partly determines the possibility for a referent to 'escape' the dominion of a coreferential nominal, and to be coded by a full nominal.

Conceptual connections within the clause are reflected in the grammatical relations between verb, complements, and modifiers. To describe the configuration of the verb and its complements, Van Hoek uses the notion of *complement chain*. The complement chain draws on the grammatical relations hierarchy: subject > direct object > indirect object > oblique (Keenan & Comrie 1977 inter alia). This notation reflects the hierarchy of prominence within the central clause: a clausal subject is more prominent than a direct object, which in turn is more prominent than an indirect object, which in turn is more prominent than an oblique complement. But note that Cognitive Grammar views such syntactic relations as surface manifestations of underlying conceptual-semantic structure (cf. van Hoek 1997: 10, 66). Apart from these verb complements, there may be (coreferential) nominals within various types of sentential modifiers. These represent the least prominent entities with respect to other entities in the central clause.

Constraints on coreference within the clause largely follow from the prominence asymmetries reflected in these patterns; the lower a nominal's position on the complement chain, the lower its conceptual connectivity to nominals elsewhere in the clause, and the higher the possibilities for construing the referent as outside the dominion of a corresponding referent within that clause, and consequently, for using a full nominal.

To give an example, the *subject* is the most prominent element within the complement chain, and therefore functions as the reference point for the central process described by the clause, with all other entities in the clause in its dominion. This explains the unacceptability of sentence (5) under a coreferential reading:

(4) *John* likes *his* mother
(5) * *He* [John] likes *John*'s mother (Van Hoek 1997: 65)

Van Hoek explains that, the subject being the most salient entity in the sentence, *he* in (5) is the *main reference point* within the complement chain. Any corresponding nominal within that chain, such as the possessive nominal *John's* within the modifier, must be highly salient as well, because it is conceptualized *relative* to the subject reference point. Consequently, the use of a proper noun, which signals low salience, prevents a coreferential reading. Van Hoek puts it as follows: "Because the subject is a reference point with the rest of the clause in its dominion, a pronominal subject cannot correspond with a full nominal elsewhere in the clause" (Van Hoek 1997: 66).

Van Hoek argues that clausal conceptual connectivity is not just a notational variant of syntactic (c-command) relations. The basic patterns arising from the complement chain - such as the tendency for the clausal subject to function as reference point for other entities in the clause (which are therefore necessarily pronominalized if they are coreferential to it), and the tendency for complements[5] of the main clause verb to function as reference point for corresponding entities in the subclause – can be overridden by conceptual-semantic factors. This can be illustrated by the following examples:

(6) * Mary hit *him* just before *John* got up
(7) Mary hit *him* before *John* had a chance to get up
(Brugman and Lakoff 1987, cited in Van Hoek 1997: 92)

The first example is ungrammatical under a coreferential reading, because any main clause verb complement normally functions as reference point for a corresponding nominal in the subclause, and the latter should therefore be coded by a pronoun. In the second sentence the conceptual break improves coreference possibilities. That is, the *irrealis* subclause describes a situation which does not in reality occur (*John getting up*), and thereby presents a conceptual break with respect to the main clause, which describes a situation which *does* occur in reality (*Mary hitting John*). This allows the referent *John* to fall outside the dominion of the coreferential object nominal.

Van Hoek provides many examples which indicate that semantic characteristics such as those in (7) override the clause-level generalizations usually captured in terms of c-command. Examples like these demonstrate the fundamentally *semantic* nature of the anaphora constraints, which allows for the possibility that sentential and discourse anaphora be accounted for in the same way.

Moreover, conceptual connectivity between nominal elements represents a *continuum* typically ranging from the strong connectivity between complements of the verb, to weaker connectivity found with clausal modifiers, to weakest connectivity, reflected in discourse unit boundaries. This weakest type of conceptual connectivity is relevant to reference point / dominion organization in narrative

[5] In Cognitive Grammar the clausal subject is also a complement.

discourse, and is reflected in a.o. episode structure. This will be discussed in section 2.5.

Linear order

The second factor in reference point / dominion organization is the *linear order* of corresponding nominals. Van Hoek posits that, in general, "a nominal [i.e. a full nominal or a pronoun already established as reference point, SvV] tends to be construed as a reference point in relation to elements which follow it in the linear string, and is less likely to be construed as a reference point in relation to elements which precede it" (Van Hoek 1997: 80). The influence of linear order can be seen by comparing sentences (8) and (9); since a nominal in a modifier (such as Carter in [8]) is relatively loosely connected to a corresponding direct object complement (more so than e.g. a nominal in a modifier to a clausal subject), it can be presented as having low conceptual connectivity to the direct object and can optionally 'escape' its dominion, as in (9). A sentence like (9), although it would be rarely uttered in actual usage, is marginally acceptable (indicated by %, Van Hoek's notation). However, this is improved when the full nominal *precedes* the corresponding pronoun: the clause-initial position of the modifier in (8) improves the acceptability of the full nominal. Note that, as these examples illustrate, grammaticality judgments can be considered a matter of degree rather than a binary distinction.

(8) In *Carter*'s home town they still consider *him* a genius
(9) %They still consider *him* a genius in *Carter*'s home town
(Van Hoek 1997: 99)

Van Hoek accounts for the influence of the factor linear order as follows: "the role of linear order is motivated by the very conception of a reference point as something which is identifiable and available to the conceptualizer before the conceptualizer makes mental contact with the things in the reference point's dominion" (Van Hoek 1997: 59). Nevertheless, this factor is not considered as influential as conceptual connectivity; the importance of this factor is "in inverse proportion to the strength of the connection between two entities" (Van Hoek 1997: 227). The stronger conceptual connectivity, the less the influence of linear order. Given this characterization, and the weaker conceptual connectivity between referents at the level of discourse, linear order (or rather one of its discourse level equivalents, referential distance) can be expected to play a more important role in the choice of referential expressions at the level of discourse.

Point of view

The factor point of view exerts its influence due to the subjectivity characterization of the nominal categories full nominal (including proper noun) and pronoun. The influence of point of view on the anaphora constraints can be illustrated by the

following: In sentences such as (10a) and (10b) below, a direct object (or any complement) contained in the subclause falls within the dominion of any corresponding subject in the main clause, and should therefore be pronominalized (if a coreferential reading is intended). The introduction of an 'outside' point of view, that of secondary characters (the opinion of the members of the organization), improves the acceptability of using a coreferential full nominal in the subclause. Van Hoek (1997: 75) notes that not all native speakers she consulted consider the (b) sentence acceptable, but all consider the (b) sentence to be improved relative to the (a) sentence.

(10) (a) * *She* joined a new organization, which paid *Sally* a lot more money
(b) *She* joined a new organization, whose members all found *Sally* to be absolutely delightful (Van Hoek 1997: 75)

Recall that Van Hoek defines dominions as *mental spaces*, "domains that we set up as we talk or listen, and that we structure with elements, roles, strategies and relations" (Fauconnier 1994:1). The construal of a new point of view opens up a new mental space. The use of (pro)nominal anaphora may then depend on the extent to which the material is construed from the point of view of a referent. If an utterance is interpreted as being in a cognizing or viewing relation with a (previously mentioned) referent, a corresponding entity within that utterance falls within that referent's dominion, triggering pronominal reference. Since viewing or cognizing relations are often implicit, it is sometimes possible to impose different mental space configurations onto a given utterance, i.e. to construe it as either conceived by the speaker or by a referent.

(11) That *he* was blond worried *John*
(12) That *John* was blond worried *him*
(13)* That *John* was always unhappy worried *him*
(Van Hoek 1997: 209)

In (11) the subclause is interpreted as representing *John*'s conception. The subject of the subclause therefore falls within the semantic dominion of the referent *John*, and is pronominalized. (Note that both in (10b) and in (11) point of view may override the general tendency based on linear order). As can be observed in sentence (12), the subclause can also be construed from an outside point of view, or, construed from the 'base space'; that is, since features such as hair colour are perceptible to everyone, the subclause, - although part of *John*'s conception - can be construed from a point of view other than *John*'s. In (12) therefore, the subclause *That John was blond* falls outside the dominion of the main clause object, licensing the use of a proper noun in the subclause. Sentence (13) demonstrates that a difference in point of view may lead to differences in acceptability in structurally similar sentences: Predications about perpetual inner states of mind cannot be construed from a general point of view outside the intended referent, but must reflect the referent's own

conceptualisation. Since the referent *John* in (13) cannot but be construed as conceptualizer, it cannot escape the dominion of the coreferential object, and should therefore be coded by a pronoun.

To summarize, conceptual connectivity, linear order and perspective are the conceptual-semantic factors affecting sentential reference point / dominion organization, and thereby the sentential anaphora constraints.

2.4 A discourse level reference point model of anaphora

This section presents the discourse level reference point model of anaphora. Section 2.4.1 presents the prerequisites and motivation for a unified approach; section 2.4.2 describes the general characteristics of the organization of reference points and dominions in *narratives*, and proposes a number of discourse level factors; section 2.4.3 presents an illustration of how the reference point model might apply to a stretch of narrative.

2.4.1 Prerequisites for a discourse level reference point model

Van Hoek (1997, chapter 5) describes a number of empirical studies involving discourse level referential patterns, which she suggests can be related to the reference point model. These studies primarily involve the distinction between primary and secondary characters in narrative (Karmiloff-Smith 1981), and the influence of episode boundaries (Ariel 1990, Tomlin 1987, Fox 1987), which Van Hoek proposes might also be captured in terms of conceptual connectivity. This section describes the prerequisites and motivation for the discourse level extension.

The separate treatment of sentence and discourse anaphora is partly due to the different research methods used. Whereas discourse level research focuses on the distribution of referential form (e.g. through corpus analysis), sentence level analysis is mainly concerned with grammaticality judgments. This sentence / discourse distinction is supported by the observation that sentential anaphora tend to evoke strong grammaticality judgments (cf. Lasnik 1989). However, this does not necessarily imply that there is a principled distinction between sentence and discourse anaphora, or that they obey fundamentally different constraints. As Van Hoek argues, the difference in acceptability judgments may be one of degree rather than kind, and may reflect "the difference between overtly coded versus implicit semantic interconnections" (Van Hoek 1997: 13). According to Van Hoek, "[t]he strongest connectivity, involving head / complement relations within clauses, gives rise to the most unequivocal judgments because there is little or no flexibility in the construal of the relationships between the nominals. In multisentential discourse, there is more room for alternate construals" (Van Hoek 1997: 13). As I understand it, sentential patterns of usage are more entrenched and less variable than discourse patterns, but constraints on (pro)nominal anaphora resulting from the conceptual

organization reflected in these sentential patterns need not be *qualitatively* different from constraints on discourse anaphora.

A unified treatment is further warranted by the fact that the same morphological forms are involved; topic referents in narrative discourse tend to display a proper noun / pronoun alternation pattern. Van Hoek convincingly argues that constraints on sentential (pro)nominal anaphora need not be stipulated separately in terms of structural rules, but fall out naturally from (i) the notion of salience inherent in nominal categories, and (ii) the clausal prominence relations described in Cognitive Grammar. Given this view of nominal semantics - combined with the conceptual-semantic rather than structural characterization of nominal contexts - the same type of constraints may apply to the use of anaphoric proper nouns and pronouns over longer stretches of discourse. The reference point model seems to offer the theoretical constructs necessary for an accurate characterization of context factors affecting referent salience and referential form in narrative discourse.

2.4.2 Characteristics of reference points and dominions in narratives

The proposed discourse level reference point model adopts the notion referent salience as the central explanatory theoretical construct. The development of such a discourse level model therefore requires a characterization of context factors assumed to affect referent salience in narratives. These factors necessarily involve characteristics of *narrative representation* and the *process* of discourse production.

Notions such as salience and conceptual connectivity can be applied to both sentence and discourse contexts, albeit in a different way: In narratives, discourse level anaphora involve global as well as local salience, and conceptual connections exert their influence over longer stretches of text. The dominion of a sentential subject, for instance, may extend beyond the immediate clausal context, provided that there is no break in conceptual connectivity or other factor which closes off the current dominion, and triggers a repeated proper noun.

Further, a discourse rather than sentence approach involves a more detailed account of the notion global salience, i.e. the salience of different referents relative to each other. The analysis of anaphoric reference within the clause necessarily disregards the flow of time and the intervention of other referents that may diminish the current salience of the intended referent. At the discourse level, the choice between full nominal and pronoun is also influenced by the topicality of a particular referent within the context of the entire discourse (for this reason, global referent salience of protagonists is addressed separately in 2.5.1 below).

An account of discourse level anaphora must also take into account the time course and, consequently, the flow of attention throughout discourse. It should be kept in mind that referent salience cannot be directly equated with concept activation: referential form is tailored to *assumed* salience for the hearer / reader. For the narrator, of course, a referent is always highly salient by the time it is ready to be verbalized. With respect to narrative (character) reference, it is tentatively proposed that the use of proper nouns and pronouns is largely a matter of both

anticipating the assumed salience of referents for the interlocutor at a certain point within the discourse, as well as actively *steering* the level of referent salience within the current context. This is what Langacker calls "attentional framing" (Langacker 2001: 154ff.). Its semantic contribution lies in imposing a "window of attention" on the conceptual content. If this view is correct, the use of proper nouns versus pronouns can be characterized as a choice or communicative strategy rather than as the result of a mechanical rule, which in turn allows for the possibility that it serves the communicative function of *signaling* the discourse structure.

One of the reasons for focusing on the narrative genre, is that it involves the construction of a representation in the form of a situation model (Zwaan & Radvansky 1998), which allows us to operationalize the notion conceptual connectivity in terms of concrete parameters such as causation, motivation/goal, and more particularly time, location, and character[6]. The choice for extending the model to the narrative genre is further supported by the general assumption that the narrative is a cognitively relevant category: *Stories* play a central role in human culture, cognition and language (Turner 1996).

Discourse level referential dominions consist of the conceptual structures that are (to be) interpreted relative to a local or global discourse topic, in narrative typically a character. A discourse dominion can perhaps best be thought of as the conceptual representation of a (fictional) situation, in which a single element is most salient, and functions as a conceptual reference point for that situation. The extent of such a dominion, and thereby the extent of continued pronominalisation, is delimited by factors affecting referent salience, such as linear order, conceptual connectivity and point of view / perspective, be it at the clause or discourse level.

The relation between these factors at the clause and the discourse level is as follows: The initial selection of reference points on the basis of global salience (cf. above) leads to the discourse level factor of intervening referents, in that the latter may temporarily *take over* the role of primary reference point. The factor linear order extends into the linear position of the discourse referent within the clause. Other discourse level counterparts of linear order involve the form of preceding corresponding reference, and the linear distance to the preceding corresponding reference (referential distance). Clausal conceptual connectivity as reflected in the different complement positions translates into the factor syntactic function for discourse referents (i.e. when the antecedent is not contained in the same clause). The discourse level correlate of conceptual connectivity is episodic structure. The factor point of view simply extends into the domain of discourse, and will be described in terms of the equivalent notion character perspective. In subsequent sections, these equivalent discourse factors – intervening reference, syntactic function, linear position, referential distance, episode structure, and character perspective – will be addressed in turn.

Lastly, it must be noted that reference point status or salience is not the only factor involved in referential form. In some cases, such as alternative descriptions, indirect anaphora, evolutive referents (Maes 2001), certain uses of

[6] The latter three are selected, because they can easily be implemented in the visual stimuli, cf. chapter 4

demonstratives (Maes and Noordman 1995) or metonymic descriptions, the referential expression itself adds information about the referent, and its form is determined by other factors than salience (alone). I propose therefore that the scope of reference point / dominion organization is *reference maintenance* throughout discourse.

2.4.3 An illustration of the narrative reference point model

The organization of reference points and dominions in narratives can be illustrated by the following example:

> (14) *Francis* got home late from town, and Julia got the sitter while *he* dressed, and then hurried *him* out of the house. The party was small and pleasant, and *Francis* settled down to enjoy *himself.* (JC.CH: 390)

In the first sentence, the protagonist subject (*Francis*) retains its status as primary reference point, and remains pronominalized, even though there are two intervening referents. In the second sentence the break in conceptual connectivity (in terms of location, time, activity and implied other characters) closes off the referential dominion. In addition, the intervention of the local topic *Julia* (in the previous sentence) diminishes the salience of the primary reference point *Francis*. Within the new context the protagonist is no longer as salient. As a consequence, a new referential dominion is created and a full nominal is used to refer to this referent within its new context.

Note that within the representation of a single clause, several referents may serve as reference point, as can be observed from the use of both null subject and pronoun in the clause *and hurried him out of the house*. Most stretches of discourse involve various different topics, and several simultaneously active referential dominions can be embedded in one another.

2.5 Factors in the narrative reference point model

This section systematically relates the factors distinguished in the reference point model to referential patterns in English fictional narrative. First, the general salience

of protagonists is described. Then the relevant factors are applied to a narrative discourse context.

The set-up of the section is as follows: Section 2.5.1 discusses protagonists and their *inherent salience* throughout a narrative; section 2.5.2 describes how intervening referents may close off a referential dominion; section 2.5.3 is concerned with syntactic function of discourse referents, i.e. *conceptual connectivity* as reflected in clause structure; sections 2.5.4 and 2.5.5 present *linear position* and *referential distance*, both as correlates of linear order; section 2.5.6 presents narrative episode structure as the discourse level correlate of conceptual connectivity; section 2.5.7 describes the influence of *perspective* in narratives; section 2.5.8, lastly, illustrates how the various factors interact at any given point during the flow of discourse.

2.5.1 Protagonists

At the level of discourse, we may distinguish global and local salience. Story characters are natural candidates for reference point status within the global narrative representation: they are the prime 'anchors' to which the story is connected. Particularly protagonists may retain their reference point status throughout longer stretches of text. Karmiloff-Smith (1981) for example found that whereas narrators often use pronouns to refer to the main character, secondary characters are often coded by full noun phrases, even when they are mentioned more recently.

Since a global discourse topic may remain salient throughout the discourse, several referential dominions may be included in the context of a *main* discourse reference point. For example in a story or episode about a single protagonist, even parts that do not directly involve the protagonist are in some sense interpreted relative to this character, and often also from his/her perspective. In such cases when the main character remains topic and point of view, it remains salient and pronominalized, even with the intervention of other characters. The following excerpt illustrates how global reference point status triggers the continued use of pronouns. The relevant chapter opens with a lengthy paragraph describing the U.S. attorney Roy Foltrigg. The second paragraph starts a new episode and runs as follows:

(15) As *he* [Roy Foltrigg] entered the Federal Building on Main Street in Memphis, a few minutes after midnight, *he* had an escort of sorts with Wally and Fink and agents Trumann and Scherff, but there were no anxious reporters. In fact, not a soul waited for *him* until *he* entered the offices of the FBI where Jason McThune sipped stale coffee with two other weary agents. So much for grand entrances. (JG.TC: 73)

The example shows how reference to a topic character is maintained through pronouns throughout an entire paragraph, despite factors that might otherwise have triggered a repeated name, such as the onset of a new episode, various intervening characters and the switch to syntactic object position (in the second sentence). Also note the fragment *so much for grand entrances*, which seems to be a representation of Foltrigg's own thoughts, reinforcing the reference point status of this character.

In spite of their natural reference point status, central characters in narratives are not invariably pronominalized, but display an alternation pattern of pronouns and repeated proper nouns; the assignment of reference point status at a specific point within the discourse depends not only on the global topicality of the character, but also on local context factors. The latter factors involve salience within the immediate context, which determines referential form for established topics. These factors will be addressed in the remaining sections.

2.5.2 Intervening reference

Another factor affecting the salience of discourse referents, one that does not usually surface when only single sentences are taken into account, is the intervention of other characters, decreasing the salience of other, previously mentioned topical referents.

This factor may close off a referential dominion, and trigger the use of repeated proper nouns in reference to established discourse topics such as protagonists. In cases of same gender/number referents, repeated proper nouns are used in order to avoid ambiguity for the hearer / reader (cf. a.o. Ariel 1990). However, the very presence of another referent – whether or not it differs in number/gender - can, especially if it functions as a (local) topic, diminish the salience of the intended referent and close off the referential dominion.

The influence of intervening reference can be illustrated by the following excerpt:

> (16) *Strauss* hits a fast serve, and once again it's a body line, aimed straight for the shoulder. *Perowne* manages to push his racket through the ball, and the volley goes more or less as he hoped, and now he's in position, on the 'T'. *Strauss* flicks the ball out of the corner, and it comes back along the same sidewall. *Perowne* goes forward and volleys again. (IME.S: 108-9)

2.5.3 Syntactic function

As noted by Van Hoek, the conceptual-semantic prominence hierarchy reflected in grammatical relations affects coreference possibilities within the clause. It also has

consequences for the extent of a reference point's dominion, and consequently referential form, when the antecedent is not contained within the same clause.

Throughout discourse, subjects are more likely to be pronominalized than other referents (Chafe 1976, Kuno 1987 inter alia). In centering theory for example (Grosz et al 1995) it is observed that for consecutive clauses, subjecthood is an important factor affecting the continuation of topic status and pronominal reference. Chafe (1994) claims that subjects typically represent starting points for the clause. Such starting points are usually accessible referents, which may explain the close association between subjecthood and pronominalization.

The tendency to repeat the use of proper nouns is expected to increase further down the complement chain (or, grammatical relations hierarchy). That is, obliques are more likely to be full nominals than indirect objects, which in turn are more likely to be full nominals than direct objects. This factor can be illustrated by the example below; the referent *Perowne* is pronominalized throughout (as subject), except when it is coded as oblique complement:

(17) As *he* straightens up, it occurs to *Perowne* that what *he* really wants is to go home and lie down in the bedroom and think it through, the dispute in University Street, and decide how *he* should have handled it, and what it was *he* got wrong.
(IME.S:102)

The prominence asymmetry reflected in the complement chain may also affect the extent to which a *competing referent* triggers the repeated use of proper nouns for an established topic. An intervening *object* is less likely to diminish the global topic's reference point status than an intervening *subject*. An intervening *indirect object* or *oblique* referent is even less likely to affect the reference point status of the topic. In the following example, the intervention of a local topic subject (another character, *Baxter*, underlined) triggers the repetition of a proper noun when reference to the main character is resumed:

(18) Above all, there swells in *him* [Henry] a peculiarly modern emotion – the motorist's rectitude, spot-welding a passion for justice to the thrill of hatred, in the service of which various worn phrases tumble through *his* thoughts, revitalised, cleansed of cliché: just pulled out, no signal, stupid bastard, didn't even look, what's his mirror for, fucking *bastard* [italics in original]. The only person in the world *he* hates [Baxter] is sitting in the car behind, and *Henry* is going to have to talk to him, confront him, exchange insurance details with him – all this when *he* [Henry] could be playing squash. (IME.S: 82)

This paragraph represents a protagonist's inner monologue, which reinforces its reference point status (cf. section 2.5.7 below). An intervening subject referent, however, triggers a repeated proper noun for subsequent reference to the protagonist. Note that within the underlined phrase constituting the intervening

subject, the discourse topic *itself* functions as a reference point to identify the intervening character. Within the larger context of the entire clause, however, the intervening subject (rather than the relative clause subject within it) is the primary reference point[7]. Return to the protagonist referent in the next clause is therefore accompanied by resumption of the proper noun *Henry*. Subsequently, the intervening character *Baxter* is again mentioned three times, in object and oblique position. The intervening object and oblique complements (which are themselves pronominalized due to the subject function of the antecedent Baxter in the preceding clause), however, do *not* trigger a repeated proper noun in the last clause, since the subject referent continues to be the referent *Henry* – as in the clause preceding the last clause[8].

2.5.4 Linear position

The sentential factor linear order, it is proposed, also holds for the level of discourse: a referent's linear position within the clause may affect its referential form, even when it does not have an antecedent within that same clause.

Due to the factor *linear order* at the sentence level, a referent typically functions as a reference point for corresponding nominals which follow it in the linear string. If linear position is also relevant for *discourse* referents, it is to be expected that a referent is more likely to fall outside the dominion of a previously mentioned corresponding referent, when it is *not* the initial constituent of the embedding clause (i.e. the clause containing the reference). This is in line with general assumptions concerning the relation between word order and information-structural notions such as given versus new information and topicality. When other material than the intended referent occupies sentence initial position, that clause-initial information is more likely to function as 'old information' or as the clause-level topic, which in turn makes it more plausible that the intended referent, at some other position within the clause, no longer functions as reference point, and is referred to by a proper noun.

The possible role of linear order can be illustrated with example (19), in which non-initial clause position is accompanied by the use of a proper noun (rather than a pronoun). Preceding this excerpt is an elaborate description of the character F. Jasmine. The continued description runs as follows:

(19) Here, among the racket and excitement, was the place ***F. Jasmine*** saw the ghost of *the old Frankie* plainest of all – hovering close to

---

[7] Cf. also Van Hoek's discussion on reference points at various levels of conceptual organization (1997: 67ff.)

[8] The idea that syntactic prominence within the clause is not absolute but may depend on conceptual-semantic factors can be illustrated by comparing the clause *it occurs to Perowne*, to the structurally similar *There swells in him*. The latter clause describes the occurrence of feelings and thoughts as in some sense 'a movement from within himself' and thereby conveys a more subjective construal than the former clause, reflected in the use of the pronoun.

> the commotion, chewing a great big lump of tar, hanging around at noon to watch the lunch-pails being opened. (CMC.MW: 75)[9]

Since there are no intervening referents (preceding the excerpt), and the protagonist functions as clausal subject, one might expect pronominal reference to this protagonist (in bold). Still, reference to her takes the form of a proper noun, which might be related to the fact that the referent does not occupy clause-initial position.

2.5.5 Referential distance

In addition to linear position, it might be plausible to assume that another discourse counterpart of linear order is linear *distance*. It is well known that referential distance affects referential form. Givón (1983) for example found that an increase in the number of clauses between mentions results in a higher proportion of full nominals.

The crucial factor in distance-based repeated full nominals seems to be *decay of concept activation* (cf. a.o. Deane 1991): the activation of a mental entity that is not focused on for some time gradually diminishes in the working memory of the discourse participants. Consequently, the entity's referential dominion is closed off because it is no longer salient, and resumed reference triggers the use of a full nominal.

The factor referential distance may exert its influence in two related ways: through the intervening *processing time* between consecutive references, and in terms of *intervening information*, such as other characters, concepts, and conceptualised events. One of the objectives of the corpus study (in chapter 6) is to disentangle the influence of processing time (roughly, the number intervening words) and intervening conceptualised events (roughly, the number of intervening clauses) as these factors naturally occur simultaneously. Both aspects of referential distance might be associated with concept activation.

Referential distance may also work the other way around, and *prevent* the use of a full nominal. In the following example, the use of two or three names in a row is infelicitous and might even suggest that somehow different 'Matildas' are involved:

> (20) *Matilda* stood up and *Ø* / ?*Matilda* began to say the two-times table. When *she* / ?*Matilda* got to twice twelve is twenty-four *she* didn't stop. *She* went right on with twice thirteen is twenty-six, twice fourteen is twenty-eight, twice fifteen is thirty, twice sixteen is... (RD.M: 64)

[9] Another interesting aspect of this example is that the second reference to Frankie (F. Jasmine) is not a reflexive, but the description "the old Frankie", construed as a different referent than the previous one. This phenomenon of split identity is analysed in Dancygier 2004.

The use of two coreferential full nominals directly following each other in closely connected sentences sends the wrong signal about the referent's current high salience. Gordon et al. (1993) also found that this tends to slow down reading times (due to the so-called *repeated name penalty*). One of the issues to be addressed in the corpus study is the question under what circumstances narrators deviate from this principle and repeat a proper noun immediately after a preceding one.

2.5.6 Episode structure in narratives

For narratives, the main discourse level correlate of conceptual connectivity is episode structure. According to Van Dijk (1982), the episode plays an important role in storage and retrieval of discourse information, in marking the difference between more and less important information, and in the overall organization of a coherent discourse representation. Schilperoord's (1996) study of written text *production* provides empirical evidence that units such as paragraphs reflect cognitive planning units on the part of the discourse producer.

For narrative comprehension, as Zwaan and Radvansky (1998) point out, there is ample experimental evidence for the psychological reality of the representation of described events (what they term *situation models*), and for the importance of conceptual connectivity between those events. Readers routinely keep track of (the continuity of) the events described in the text, rather than only the sum of propositions contained in the text. According to Zwaan et al. (1995), successive events are *indexed* along the dimensions of *time*, *space*, *causation*, *motivation* and *protagonist*. The (dis)continuity of events in terms of these dimensions affects the integration of successive clauses within the overall narrative representation; each of these dimensions has been demonstrated to affect for example reading times and memory retrieval (cf. Zwaan & Radvansky 1998 and references therein). The fact that these (various dimensions of) event representations are used not only in comprehension but also in memory retrieval, suggests, in my view, that they are also relevant to text *production*.

These empirical observations reflect the notion of conceptual connectivity in narrative discourse. They also support its characterization as a continuum: consecutive clauses represent either a break or a continuation on *any* (combination) of these dimensions, which entails that the conceptual connectivity between consecutive clauses may vary in strength, depending on the number of changed dimensions; in addition, the dimension breaks themselves may differ in strength (e.g., within the context of a single story, a flashback to a description of a previous century might represent a greater conceptual break than a transition to 'the next day'). In view of its composite nature, then, episode structure is not necessarily an all-or-nothing affair. (However, in written discourse a decision as to episode structure is often forced because of orthographic structure).

I adopt the following working characterization of episode structure:

- Episode structure is the reflection of conceptual connectivity in narratives. It is a continuum comprising (at least) the parameters *character*, *cause*, *motivation*, *location* and *time*.
- Episode breaks occur when there is a (weak or strong) change in one or more of these parameters that define the conceptual connectivity throughout the narrative. Consequently, episode boundaries represent conceptual shifts of variable degree and kind.
- Prototypical episode shifts involve time and location.
- There are various text signals for the demarcation of episodes, such as paragraph indentations, and locative and temporal discourse markers, amongst others (Van Dijk 1982: 181).

The nature of episode structure can be illustrated by some examples. The episode break in (21) represents a strong conceptual break; there is a shift in time, location, characters, and cause: from a description of a safe and pleasant childhood to an unexpected terrible event. The episode transitions in example (22), on the other hand, involve only a temporal break and a continuation in other respects.

(21) Until he was four years old, James Henry Trotter had a happy life. He lived peacefully with his mother and father in a beautiful house beside the sea. There were always plenty of other children for him to play with, and there was a sandy beach for him to run about on, and the ocean to paddle in. It was the perfect life for a small boy.

Then, one day, James's mother and father went to London to do some shopping, and there a terrible thing happened. Both of them suddenly got eaten up (in full daylight, mind you, and on a crowded street) by an enormous angry rhinoceros which had escaped from the London zoo. (RD.JGP: 7)

(22) The two women and the small boy stood absolutely still on the grass underneath the tree, gazing up at this extraordinary fruit. James's little face was glowing with excitement, his eyes were as big and bright as two stars. He could see the peach swelling larger and larger as clearly as if it were a balloon being blown up.

In half a minute, it was the size of a melon!

In another half-minute, it was twice as big again! (RD.JGP: 21)

Episode structure and referential form

The extent of referential dominions is partly determined by the conceptual connectivity reflected in episodic structure; an episode transition may close off the current referential dominion, triggering a repeated full nominal, even if the same character appears in both episodes. The repetition of full nominals after episode

boundaries has been demonstrated in various empirical studies (a.o. Clancy 1980, Chafe 1980, Marslen-Wilson et al. 1982, Fox 1987, Tomlin 1987, Vonk et al. 1992).

Within the adopted reference point model, this tendency to repeat proper nouns at the beginning of new episodes can be explained as follows: First, the cognitive effort involved in the conceptualization of a new episode (for both narrator and hearer/reader) causes a disruption in the flow of attention, and leads to a lower degree of assumed referent salience. A related explanation involves the notion that the extent of a reference point's dominion depends on conceptual connectivity between coreferential nominals; shifts along the dimensions of time, space etc. disrupt conceptual connections between a nominal and its antecedent contained within the previous episode. In other words, these conceptual connections are weaker if the referents are embedded within different episodes.

The tendency to repeat proper nouns at the onset of new episodes can be illustrated by the following example:

(23) *Nick* hastily finished *his* own drink, and said, 'Thanks. Or maybe this time I'll have a shot of rum in it'.
After half an hour more *Nick* had slid into a kind of excited trance brought on by *his* new friend's presence [...]. (AH.LB: 33)

Note that a pronoun would be considered perfectly acceptable in this sequence. In fact, repeated proper nouns are generally not obligatory after episode transitions. This can be explained by the following two factors:

First, reference point / dominion organization is not about conceptual connectivity alone; it is about the *interaction* of (global) referent salience and conceptual connectivity. There is fluctuation of referent salience throughout the text, as well as variation in the salience of different referents relative to each other. That is why inherently topical entities such as protagonists can sometimes be pronominalized throughout, even after episode boundaries. Other factors that may prevent repetition of proper nouns are e.g. the need to avoid two proper nouns immediately following each other, or perspectivized construal of a topic referent.

A further explanation for the acceptability of proper nouns *and* pronouns after episode boundaries is that, as pointed out above, conceptual connectivity between episodes is variable, and the tendency to repeat proper nouns is influenced by the extent to which consecutive episodes are viewed as being closely related. One might expect that if two episodes are considered closely related, for example because they involve only a slight change in a single situation model parameter, it is more acceptable to continue pronominalizing the intended referent, as it might be in (23) above. The differences can be illustrated by comparing example (23) to example (24) below:

(24) *Nick* was glad *he* wasn't going to Nat's wedding, and yet *his* absence, to anyone who noticed, might seem like an admission of guilt, or unworthiness. *He* saw a clear sequence, like a loop of

> film, of *his* friends not noticing *his* absence, jumping up from gilt chairs to join in the swirl of a ball. On analysis *he* thought it was probably a scene from a Merchant Ivory film.
>
> The doorbell trilled and *Nick* / ? *he* saw a van in the street where the rolls had been. *He* went out and there was a skinny boy in a baseball cap pacing about, and some very loud music.
>
> (AH.LB: 486-7)

In this excerpt from the same novel, involving the same protagonist, the episode shift is also accompanied by a repeated proper noun. Here, however, a pronoun at the episode onset would be less felicitous than in (23), since the break in conceptual connectivity is much stronger: the first episode describes the character's fantasy, of an envisaged situation remote from the current story setting. At the episode boundary an external cause (the bell) shifts the story back to the main setting, the reality of the story. The break in conceptual connectivity therefore involves not only time, but also location. Most importantly, there is a shift from the character's inner world to external reality.

The variable strength of episode boundaries, and the accompanying difference in the necessity to repeat proper nouns, can be further illustrated by comparing example (23) to example (14) in section 2.4.3 above. The conceptual break in (14) involves more event parameters than the one in (23): a shift involving time (inferred), location, motivation (i.e. the character's goals) and character (i.e. the inferred presence of other characters). Note that in (14), pronoun continuation would be less acceptable than in example (23).

Recall that acceptability judgments such as the ones described above are considered a matter of degree rather than kind, even at the clause level. We may conclude that the variability in episode-related proper noun repetition does not imply that discourse anaphora constraints are fundamentally different from sentence constraints.

These variable possibilities in turn enable narrators to communicatively *exploit* reference point / dominion organization for structuring the discourse. That is, the narrator is able to influence the construal of conceptual connectivity between episodes by the choice of referential form: establishing a new referential dominion by means of repeated full reference reinforces the conceptual break between consecutive episodes; the continuation of a referential dominion through pronominalisation, on the other hand, enhances the conceptual connectivity between the episodes.

Non-canonical episode structure and referential form

Conceptual discontinuities can also occur in the described *actions* in a story. Fox (1987) finds that in written narratives repeated full nominals are often used in *development structures*, when a character initiates an *action*, in reaction to foregoing events (cf. Fox 1987 for similar examples):

(25) But then suddenly, just as *he* [James] was passing underneath the old peach tree that stood in the middle of the garden, *his* foot slipped, and *he* fell flat on his face in the grass. The paper bag burst open as it hit the ground and thousands of tiny green things were scattered in all directions.

James immediately picked *himself* up onto *his* hands and knees, and started searching around for *his* precious treasures. (RD.JGP: 20-21)

The following example describes the main character as *stopping* her actions in response to what happens, which can also be interpreted as an (change in) action of some kind:

(26) *She* [F. Jasmine] was walking home when all at once there was a shock in *her* as though a thrown knife struck and shivered in *her* chest. F. Jasmine stopped dead in her tracks, one foot still raised, and at first *she* could not take in what had just happened.

(CMC.MW: 89)

Within the current *composite* approach to episodic structure (comprising a combination of the five dimensions mentioned above), development structures can be said to involve the dimensions of *cause* and *motivation* – at least they do not involve the parameters *time*, *location* and *character*. Alternatively, it might be the case that 'action' constitutes another situation model dimension, (Zwaan & Radvansky 1998 mention the possibility that still other dimensions be added to situation models). In any case, development structures differ from *prototypical* episode boundaries in that they do not involve temporal and locative shifts, but can be accounted for in the same way, namely in terms of the continuum of conceptual connectivity, i.e. episode structure.

An additional aspect of narrative structure relevant to referential patterns is the general distinction between story *background* and plot *advancement* (Werth 1999 inter alia). Background propositions constitute the conceptual background relative to which the story makes sense; plot-advancing propositions specify the actions and processes taking place within the story. The break in conceptual connectivity involved in going from plot to background may close off the current referential dominion and trigger a repeated full nominal such as a proper noun.

In the following example, the underlined sentence represents a background proposition: it does not describe the actions or developments in the story, but portrays *Matilda*'s background situation, which is accompanied by a repeated proper noun:

(27) *Matilda* longed for *her* parents to be good and loving and understanding and honourable and intelligent. The fact that they were none of these things was something *she* had to put up with. It

> was not easy to do so. But the new game *she* had invented of punishing one or both of them each time they were beastly to *her* made *her* life more or less bearable.
>
> Being very small and very young, the only power ***Matilda*** had over anyone in *her* family was brainpower. For sheer cleverness *she* could run rings around them all. (RD.M: 43)

One of the properties of background propositions is that their predicates denote inherent *states* and *properties* rather than actions or processes. This characteristic also affects referential form; as Bolinger (1979) points out, repeated full nominals may emphasize the inherent nature of the referent, what he calls 'X qua X': "X has the quality suggested by the clause in which X occurs" (Bolinger 1979:291). Consider the following examples ([28] is Bolinger's [ibid.]):

(28) You don't need *sulfur* for drying apricots; *sulfur* ruins the flavor.

(29) This was the summer that *Frankie* was sick and tired of being ***Frankie***. *She* hated herself, and had become a loafer and a big no-good who hung around the summer kitchen: dirty and greedy and mean and sad. (CMC.MW: 29)

In (29), anaphoric reference to the protagonist occurs through a repeated proper noun (in bold), where one would normally expect a reflexive anaphor. The emphasis on the situation and the inherent nature of the referent *Frankie* ('being Frankie') might explain the repeated proper noun.

Another type of background proposition is a narrator comment or evaluation, as in (30) below:

(30) *She* had been happy: *she* was young, healthy, elegant, clever, successful, respected and famous. Unfortunately, *Adele* heard voices inside her head. Voices that spoke to *her* using words that were vile and obscene. *She* saw psychiatrists in Paris and London, but in neither language did *she* gain relief. Psychotropic drugs had no effect. The voices continued to jabber and accuse *her* of heinous crimes. (ST.NT: 25)

In (30), after describing the protagonist as happy, the underlined sentence shifts to a different situation than the one presented in the previous sentence. The situation described in the underlined sentence contrasts with the situation described earlier, and also reflects a narrator comment through use of the word 'unfortunately'. This comment is accompanied by the repeated use of the proper noun.

2.5.7 Character Perspective

As pointed out above, pronouns are associated with character perspective (the referent as conceptualizer), and proper nouns with 'outside' perspective (a secondary character perspective or narrator perspective). This section presents a number of examples illustrating how proper nouns and pronouns might relate to the notion character perspective, as developed in Sanders (1994).

Perspective is an important and pervasive characteristic of all narrative discourse. Sanders (1994, chapter 1) describes three ways in which the term perspective is used. One interpretation is 'world view', which will not be addressed in this study. Second, a 'literal' interpretation is that of visual viewpoint or vantage point. This involves the factor visual viewpoint as implemented in the pictures, to be described in subsequent chapters. The third characterization is that of character perspective, which involves the way the thoughts and speech of narrative characters is represented in the text. This latter perspective notion will be addressed here.

For current purposes I adopt Sanders' (1994) definition of discourse perspective as *subjective point of view*:

> Perspective is the introduction of a subjective point of view that ascribes the claim of validity of the presented information to a particular subject (person) in the discourse. A discourse segment is perspectivized if its relevant context of interpretation is a person-bound, embedded space within the narrator's reality (Sanders 1994: 37).

In various degrees of directness, the responsibility for content and verbalization of speech and thought can be attributed to sources other than the narrator. A so-called *implicit perspective* represents the character perspective in a subtle way and may be achieved by a variety of linguistic means such as modal verbs, verbs of cognition and perception, and referential expressions. This can be illustrated by the following newspaper example from Sanders (1994: 59):

(31) The police lost track of the car with *the kidnapped girl*. In the woods near Apeldoorn, a policeman discovered a man who had *a girl* with him. The kidnapper had released *her* in a nearby street.

In this example the italicized referent is the central character of the story. Nevertheless, the switch to another character's perspective (the policeman's, as conveyed by the use of 'discover') triggers the use of an indefinite nominal, reflecting the newness of the topic within the perspectivized space.

Sanders and Redeker (1996) propose that Langacker's (1990) notion of subjectivity (the general term for distinguishing the subject and object of conceptualization) be extended to include character subjectivity / perspective (invoking the character as conceptualizer). In this way, a referent's information

status is assessed not only relative to the hearer/reader, but also relative to the embedded character[10].

Given the characterization of pronouns in terms of perspective, it is expected that they are often used in reference to characters that function as conceptualiser of the propositional content, as in example (32) below:

(32) *He* needed a new lawyer, one who would return *his* phone calls and meet *him* for drinks and find some jurors who could be bought. A real lawyer!

He needed a new lawyer, and *he* needed a continuance or a postponement or a delay, hell, anything to slow this thing down so *he* could think. (JG:TC: 27)

This excerpt represents the character's own thoughts, as reflected in the exclamations *a real lawyer* and *hell*, and in the different legal descriptions (the character is uncertain whether the legal term for what he needs is a continuance, a postponement, or a delay). A proper name in the last sentence would be anomalous, because it would be incompatible with the referent's status as the conceptualizer. Note that the *sentential* (pro)nouns in the examples (11) through (13) (section 2.3.2 above) are accounted for in the same way; the name in sentence (13) is incompatible with its reference point status as experiencer of the predication. This confirms that the same perspective constraint on (pro)nominal anaphora holds both within and across sentences.

In some cases, character perspective may even override salience for the discourse participants. Emmott (2003) observes that a protagonist's perspective may present another, envisaged, character as salient, and license the use of pronouns, even when a third character has been mentioned more recently (and can therefore normally be assumed to be more salient). The following is Emmott's example from a popular fiction novel (her example 2, p.298):

(33) I went to bed early ... When *Jake* climbed in beside me later, I pretended to be asleep, though I lay awake for hours in the dark. I planned what I would wear. I thought about how I would hold **him** [Adam], learn his body, trace his ribs and his vertebrae...

Compared to *pronouns*, *full nominals* such as proper nouns present the perspective of the narrator or of a character other than the intended referent. In the following example, the repeated proper noun (bold) presents an outside perspective on the referent, in that the clause is not presented from the perspective of that referent, but as conceived from the perspective of a secondary character – the father:

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[10] Here I use the more general term 'information status' instead of reference point status, because the indefinite nominal involves (embedded) *identifiability* and *newness*.

(34) *Jimmy* knew what burning hair smelled like because *he*'d cut off some of *his* own hair with the manicure scissors and set fire to it with *his* mother's cigarette lighter. [...]

His father had laughed then, but *his* mother hadn't. At least (*his* father said) ***Jimmy***'d had the good sense to cut the hair off before torching it. (MA.OC: 18)

The examples suggest that a proper noun tends to portray its referent from the perspective of either the narrator or a secondary character; a pronoun on the other hand might be more likely to portray its referent from the perspective of the intended referent itself. As with the other factors, this is probably best characterized as a tendency and a preferred interpretation, rather than as a hard-and-fast rule. In addition, it may in many cases be difficult to disentangle perspective from salience. Salience and character perspective often coincide for topic characters in narratives. The influence of perspective specifically can be observed when a narrator uses both a pronoun and a proper noun in juxtaposition, as in example (35) below:

(35) The three people in the world ***he, Henry Perowne***, most loves, and who most love *him*, are about to come home. So what's wrong with *him*? Nothing, nothing at all. *He*'s fine, everything is fine. (IME.S:181)

In this excerpt, the pronoun is used, arguably, because the protagonist is portrayed as the experiencer, reinforced by the use of free indirect discourse (witness the question and repetitions). The full nominal used directly after the pronoun may indicate that this character is looking at himself 'from the outside', trying to analyse himself as objectively as possible. The use of both pronoun and proper noun directly following each other can be ascribed to the incorporation of both an outside perspective and the character perspective.

In chapter 3 this factor will be operationalised such that perspective categories can be distinguished on the basis of reliable linguistic characteristics (Sanders 1994).

2.5.8 Interaction of factors

Discourse level referential choices usually involve the *interaction* of various factors affecting referent salience within the current context. For example, a narrator may be dealing with conflicting factors: an episode transition occurring just *after* a full nominal sometimes may prevent the use of yet another proper noun. In addition, the perspectivized construal of a referent may prevent the use of a repeated name after an episode transition (as in example 32 above). Furthermore, factors such as conceptual connectivity are presumably not represented as binary features, but rather as a continuum. This interaction of factors causes variability in referential patterns.

That is, none of these factors can be defined as a direct trigger or rule for the assignment of referential form.

The following example illustrates the interaction of some of the aforementioned factors:

(36) From Gary and his wife, in addition to the port, *Chip* received a clever vacuum-pump system for preserving leftover wine from oxidation, as if leftover wine were a problem *Chip* had ever had. (JF.TC: 82)

In spite of the relatively small referential distance, the second mention of *Chip* is by a full nominal. The repeated name emphasizes the inherent nature of the character, as in Bolinger's (1979) 'X qua X' sentences. In addition, the full nominal reflects the break in conceptual connectivity through the introduction of the *irrealis* context (a *counterfactual* space in the sense of Fauconnier 1994).

Another example is given in (37) below. The repeated name in segment (37) involves the inherent nature of the referent, the notions of *contrast, competition* and the reduced salience of modifiers relative to the complement chain:

(37) (i) *He* [Gitanas] could hardly believe that a man as young and talented as Chip was willing to work for *him*. (ii) *He* was only briefly dismayed that Chip had been sleeping with *his* wife. (iii) In ***Gitanas'*** experience, *everyone* [italics in original] eventually betrayed *him*. *He* appreciated that Chip had accomplished his betrayal before they even met. (JF.TC: 448)

In this segment, the character *Gitanas* is highly salient, and a pronoun in the third sentence would have been perfectly acceptable. The repeated proper noun can be related to a number of (converging) factors: First, the segment is a background proposition which reveals a stable, inherent trait of Gitanas' personality, emphasizing the nature of the referent. In connection with this, Gitanas' experience is construed as *contrastive* with the experience of others.

Another possible trigger for proper noun repetition is intervening reference: the mention of the character Chip in the preceding clause (in sentence [ii]). Note that this intervening referent also occurs in the first sentence of the segment (i), in which case it does *not* trigger repeated proper noun use in subsequent reference to the topic character Gitanas (in indirect object position in [i]). Subsequent reference to Gitanas in sentence (ii) is as pronominal subject; in the subclause in (ii), the character Chip is also in grammatical subject position (therefore arguably more salient than in [i]), and is *initially* followed by *pronominal* (possessive) reference to Gitanas, and in the *next* sentence (iii) the *proper noun Gitanas* is repeated. It is possible that in (ii), the referential dominion of Gitanas extends to the entire sentence, (i.e. including the coreferential possessive) due to the coreferential subject in the main clause, and that only in the next sentence (iii) the intervening reference to Chip as subclause subject of the previous sentence, closes off the Gitanas dominion and triggers the full

nominal reference to Gitanas. In other words, it might be the case that if there is a highly salient clausal subject, an intervening reference elsewhere in the clause only exerts its effect in the next sentence.

Lastly, the repeated name reflects *sentential* reference point / dominion organization: As a nominal in a modifier, the reference to Gitanas is relatively loosely connected to the main clause object, and can therefore escape its dominion. This possibility is strengthened by the order of the nominals, the full nominal preceding the coreferential pronoun.

The interaction of various factors in the assignment of referential form is the main reason that quantitative distributional analyses of discourse reference are needed in order to confirm the validity of the various individual factors discussed above, and to assess which of the factors are most important in affecting the salience of referents within the narrative context.

2.6 Summary

This chapter presents the theoretical background to the study. First, it addresses the conceptual prerequisites for referential expressions to occur. The chapter subsequently addresses the processual conditions which guide the choice for a particular *type* of expression. It presents the notion of referent salience as the central theoretical construct for a cognitive account of the proper noun / pronoun alternation in narratives. The main part of the chapter is concerned with illustrating the factors that might influence the distribution of proper nouns and pronouns in narratives.

The chapter describes a reference point approach to *reference maintenance* in narratives. It is shown that the theoretical constructs used in Van Hoek's (1997) sentence level analysis, can also be used to provide discourse factors which adequately describe referential patterns at the level of narrative discourse. I proposed a number of discourse level factors that involve the notions salience, conceptual connectivity, linear order and point of view.

The main part of the chapter illustrates the factors intervening reference, syntactic function, linear position, referential distance, episode structure, and character perspective, and their effect on the repetition of proper nouns in reference to established discourse topics. An account of conceptual narrative representation in terms of referential dominions provides the characterization of context that is needed to support a salience-based account of referential expressions in various usage situations. It is proposed that reference point organization has the communicative function of attention framing: by choosing a type of referential expression, the narrator both anticipates the assumed referent salience for the reader, and actively contributes to the construal of referent salience and discourse connectivity.

As I hope to have shown, the literary examples given in this chapter can be adequately described in terms of the reference point model. But how can we be sure that the referential choices in the examples, which are presumably the result of

careful revision and editing, are not just a literary or stylistic artifact? The claim of the model presented here is much broader: that is, the reference point model represents a cognitive mechanism, which also underlies referential choices in spontaneous, non-literary narratives. One of the aims of this study is to assess to what extent such a cognitive semantic description of nominal categories and referential patterns also accounts for the *actual usage* of language; the referential patterns described here in terms of the reference point model form the main basis of the hypotheses concerning referential choice in narratives, to be operationalized in chapter 3, and to be tested in the corpus study of chapters 5 and 6.

Chapter 3
Operationalization of factors affecting referential choice in narratives

3.1 Introduction

The previous chapter extended Van Hoek's (1997) reference point model of anaphora to the domain of narrative discourse. I used examples from English fictional narrative to illustrate the factors that might be involved in discourse level referential patterns. The extent to which these factors indeed contribute to referential choice in online discourse production will be investigated in the analysis of a visually elicited corpus of written Dutch narratives. This chapter addresses the question how the relevant factors should be operationalized, and develops the hypotheses to be tested in chapters 5 and 6.

As for the factors addressed here, most of them are a straightforward application of the discourse level reference point model, and are only briefly summarized here; some are more specifically related to discourse phenomena only, or to factors known from the literature. Apart from *clause-internal* factors syntactic function and linear position, the chapter addresses the 'surface' discourse factor *referential distance*, and a number of *discourse-structural* factors. The relative importance of different types of factors will also be addressed in subsequent chapters. Here each factor will be operationalized individually.

In what follows I will first specify characteristics of topic references, i.e. the type of references that will be analysed (3.2). Then I will put forth hypotheses for referential choice in topic *maintenance*, with respect to the following factors: the occurrence of intervening referents (3.3); the clause-level factors syntactic function (3.4) and linear position (3.5); linear distance between anaphor and antecedent, or, referential distance (3.6); the discourse-structural factors episode (3.7), visual viewpoint and discourse perspective (3.8) and perceptual attention (3.9). In addition, section 3.7 puts forth a number of hypotheses involving the possibility that referential expressions do not only function as *identifiers* of referent representations, but also as *signals* or *markers* that impose structure onto the discourse.

3.2 Protagonists

In chapter 2 a distinction was made between local and global salience. At the level of discourse, certain referents are 'intrinsically' more salient than others, due to their role in the entire narrative. The tendency for main characters to be pronominalized

more often, and coded as subject more often than secondary characters, has been established by previous research (Karmiloff-Smith 1981, Kuno 1987 i.a.).

In chapter 5, these tendencies will be tested for the collected corpus. The objective in replicating earlier findings is to confirm the global topic status of the target referent at the text level (rather than the 'picture' level only). The use of expression types other than pronouns (e.g. repeated proper nouns), in reference to characters that are salient within the overall discourse, can then be ascribed to the various context factors described below.

A related expectation concerns the *range* of different referential expression types available to the language producer. As proposed in chapter 2, proper nouns and pronouns are the typical categories for topic maintenance. Other referential expression types such as indefinite, demonstrative and modified NPs, it is argued, are associated with functions other than reference maintenance (e.g., adding information about the referent), and are expected to be rare. If this expectation is indeed borne out, this lends validity to investigating the general opposition between proper nouns and pronouns, rather than all available referential expression types.

Lastly, given the focus of the research, all hypotheses pertain to protagonist reference. Throughout the chapter, therefore, the phrase 'proportion of proper nouns / pronouns' can be taken to refer to the proportion of proper nouns / pronouns *in reference to the intended character referent* (in the corpus analysis: the main character in the visually elicited story).

3.3 Intervening reference

One of the factors often assumed to affect referent salience and referential form is referent competition (cf. Ariel 1988, 1990). This primarily involves referents which agree with the intended referent in gender and number (hence the term competing referents), since these can cause ambiguity for the reader. In chapter 2 I put forth the idea that the very presence of an *intervening* referent, insofar as it functions as an intervening topic, may close off the current referential dominion, and trigger the use of proper nouns – even when the intervening referent does not agree with the intended referent in number and gender, and possible ambiguity is not at issue. This gives rise to the following hypothesis:

> **Hypothesis intervening reference**
> In references to a story protagonist (i.e., the intended referent), the proportion of proper nouns increases when *another* character (an intervening referent, not agreeing in number and gender) intervenes between the protagonist referent and its antecedent reference.

In chapter 5 this factor is analysed as part of the visually implemented viewpoint variable (also incorporating referential distance and visual viewpoint, cf. below). It will be analysed as a separate factor in chapter 6.

3.4 Syntactic function

In Van Hoek's (1997) reference point model the different clausal complements *subject*, *direct object*, *indirect object* and *oblique complement* are ordered in a hierarchy of salience. This so-called *complement chain* reflects the salience of these complements relative to one another, ranging from relatively high (subject) to relatively low (oblique). Within the clause, these differences affect conceptual connectivity between coreferential nominals and thereby the sentential anaphora constraints (cf. chapter 2).

It is proposed that the complement chain determines not only the reference point status of *coreferential* entities *within* the clause, but also influences salience and thereby referential choice, at the level of discourse, i.e., also when the antecedent is not contained within the same clause. It is well known that subject referents, as the most salient entities within the clause, are pronominalized more often than referents in other syntactic positions. The present hypotheses are concerned with the influence of subject function, and also with the finer-grained salience distinction between the various clausal complements.

The hypothesis about syntactic function will be tested in chapter 5. The hypothesis concerning the main opposition between subject and other syntactic functions will be tested in chapter 6.

Hypothesis syntactic function
In reference to topic characters, the proportion of pronouns in subject position is higher than the proportion of pronouns in direct object position. The proportion of pronouns in direct object position is in turn higher than the proportion of pronouns in indirect object position. The proportion of pronouns in indirect object position, lastly, is higher than that in oblique complement position.

Hypothesis subject function
The probability for using a proper noun increases if the intended referent deviates from its default subject position and does *not* function as subject of the embedding clause.

3.5 Linear position

It is expected that the *clause*-level factor linear position is also relevant for the form of *discourse* referents. A number of studies indicate that the order of constituents within the clause reflects differences in information structure, e.g. differences in

topicality, focus structure, given vs. new information (Lambrecht 1994, Chafe 1994 inter alia). It is therefore reasonable to assume that a referent's linear position within the embedding clause affects its salience, and, consequently, the choice between pronominalization and repetition of the proper noun. If the topic referent occupies the initial constituent position within the clause, it has a higher degree of salience, and is therefore more likely to be pronominalised, than if another constituent occupies initial position. This leads to the following hypothesis, to be tested in chapter 5:

> **Hypothesis linear position**
> The proportion of pronouns in clause-initial character references is higher than the proportion of pronouns which do not occupy clause-initial constituent position.

3.6 Referential distance

Another factor assumed to affect referent salience and thereby referential form is the linear distance between corresponding references. Givón (1979) found that an increasing number of clauses between references increases the use of full nominals. The present study gives a more fine-grained analysis of the influence of referential distance. It is analysed not in isolation but in comparison to and in combination with other factors. Another way in which the analysis of referential distance is refined concerns the way in which distance is measured, namely, not only in terms of the number of clauses intervening between consecutive references, but also in terms of the intervening words. Both measures of referential distance can plausibly be related to a decrease in referent salience: Clauses between consecutive references can be assumed to exert their influence on referent salience primarily through the intervention of semantic content (propositions), whereas intervening words can be viewed as a more accurate reflection of processing time, directly affecting referent activation, and thereby referent salience. To be sure, words also represent information, and clauses also represent time, but we can make a gradual distinction. These measures of course coincide in the real-time production of discourse, and both are assumed to affect referential choice, but the analysis presented in chapter 6 aims to disentangle both aspects of referential distance, and to explore their relative contribution.

Another, related aspect of referential distance is the following: For language comprehension, the mention of two coreferential proper nouns immediately following each other tends to slow down reading times (Gordon et al 1993). It is expected that this principle also operates in language production, and that narrators tend to avoid using two proper nouns in a row.

The hypotheses involving referential distance are as follows:

Hypothesis referential distance in clauses
The tendency to use proper nouns (rather than pronouns) increases with the number of clauses intervening between consecutive references. (For instance, chances for selection of a proper noun (rather than a pronoun) two clauses after the previous corresponding reference are greater than the chances for the selection of proper noun after only one intervening clause).

Hypothesis referential distance in words
The tendency to use proper nouns increases with the number of words intervening between consecutive references.

Hypothesis repeated name constraint
The tendency to use proper nouns decreases immediately after a preceding coreferential proper noun.

In chapter 5 the distance factor is not analysed as an individual factor, but as part of the visual viewpoint variable. It is also analysed in combination with the factor episode shift (involving the strength of the latter factor, cf. 3.7.2 below). Chapter 6 presents a detailed analysis which assesses the individual weight of referential distance and its relation to other factors.

Lastly, the increase of repeated proper nouns after increasing referential distance has in recent years been interpreted not (only) as a function of referential distance per se, but rather as an epiphenomenon, in fact resulting from discourse-structural factors (e.g. Tomlin 1987). It is argued that one cannot fully characterize the use of repeated full nominals without taking into account the hierarchical structure of discourse, that is to say, factors such as episodic structure (Tomlin 1987, Ariel 1990). Chapter 6 assesses the individual contribution of referential distance, in an analysis in which such factors are also taken into account, thereby enabling us to assess if indeed the influence of referential distance can be characterized as an epiphenomenon of *discourse structure*. The operationalization of such discourse-structural factors will be described in the remainder of the chapter.

3.7 Episode structure

The hypotheses exemplified below (and in subsequent sections) start from the assumption that discourse-structural shifts lower the salience of the intended referent within its context, triggering the repeated use of proper nouns. The discourse-structural factors described below (except character perspective) were implemented in the visual stimuli used to elicit the corpus of written narratives. This section first addresses the factor episode structure.

3.7.1 Episode shifts

Episode structure is characterized as the reflection of conceptual connectivity in narrative discourse. Episode boundaries represent breaks in conceptual connectivity and trigger the repeated use of proper nouns in reference to narrative characters. The episode transitions analysed here (implemented in the visual stimuli) are characterized by narrative shifts in location and time. The influence of episode boundaries on repeated proper nouns has been established in other studies as well (Fox 1987, Tomlin 1987, Chafe 1980, Marslen-Wilson et al. 1982). In addition, for text comprehension, the use of repeated proper nouns reinforces the interpretation that a new episode begins (Anderson et al. 1983, Vonk et al. 1992). The hypothesis for the episode factor is as follows:

> **Hypothesis episode shifts**
> The proportion of proper nouns immediately following an episode boundary is higher than the proportion of proper nouns in continuous stretches of discourse.

3.7.2 Episode and distance factors

This section addresses the strength of the factor episode, i.e. the extent to which repeated proper nouns after episode shifts are affected by the linear distance to, and form of, preceding corresponding reference.

Preceding reference and repeated proper nouns after episode transitions
The extent to which the tendency to repeat proper nouns after episode boundaries is affected by the basic strategy to avoid immediate proper noun repetition, may inform us about the 'robustness' and independence of this tendency. It is expected that the proportion of proper nouns at the beginning of a new episode is *not dependent* on the form of corresponding reference (proper noun or pronoun) immediately preceding the episode transition. If this expectation is borne out, the repetition of proper nouns after episode boundaries can be interpreted as a strong tendency, as it overrides the tendency to avoid using two proper nouns in a row.

> **Hypothesis form of preceding coreference and episode shifts**
> New episodes lead to the repetition of proper nouns, *irrespective* of the form of corresponding reference (proper noun or pronoun) immediately preceding the episode transition.

Referential distance and proper nouns after episode transitions
The tendency to repeat proper nouns after episode shifts may be affected by the linear distance between the reference immediately *before* and immediately *after* the

episode shift: If the referent has just recently been mentioned (in the preceding clause), the referent's salience may not have diminished to the extent that a proper noun is used to refer to the referent, and a pronoun may be used after the episode boundary.

If, on the other hand, the strength of the factor episode is such that it may trigger a proper noun anyway, the use of such proper nouns is *not* affected by the distance to the previous reference. The proportion of repeated proper nouns after episode transitions is expected to remain the same, regardless of whether the referent is mentioned in the directly preceding clause.

> **Hypothesis referential distance and episode shifts**
> New episodes lead to the repetition of proper nouns, *irrespective* of the presence or absence of corresponding reference in the clause immediately preceding the episode transition.

3.7.3 Episode and discourse markers

This section is concerned with the *communicative function* of referential expressions, - and thereby diverges somewhat from the description of factors elsewhere in the chapter. It addresses the possibility that repeated proper nouns serve not only the function of identifying the intended referent, but also the function of actively signalling the discourse structure. Vonk et al. (1992) present experimental research that supports the idea of full nominals (such as proper nouns) used as tools by speakers or writers to indicate discourse structure transitions. The communicative function of using a proper noun for an otherwise highly salient referent, on such a view, is to indicate to the addressee that that referent belongs to a new part of the discourse.

One of the ways to investigate the communicative function of proper nouns is by looking at the use of discourse markers and referential expressions at the beginning of new episodes. Episode boundaries are often accompanied by discourse markers, such as temporal expressions (*the next day*) or locative expressions (*in the backyard*). If repeated proper nouns after episode boundaries have a signalling function, and if that function is *comparable (interchangeable)* to established discourse markers such as temporal or locative adverbial phrases, one might expect a complementary distribution between such discourse markers and repeated proper nouns (rather than continued pronouns) after episode boundaries. That is, the proportion of proper nouns occurring after an episode shift may be lower if the writer has *already* signalled the onset of a new episode by means of (other) discourse markers, such as adverbial phrases.

Hypothesis discourse markers and referential form at episode transitions
The proportion of proper nouns in episode transitions *without* discourse marker is higher than the proportion of proper nouns in episode transitions *with* discourse marker.

Although the (complementary) distribution of discourse markers and repeated proper nouns may shed some light on the communicative function of referring expressions, it cannot provide definitive answers. A confirmation of the above hypothesis is certainly consistent with the general hypothesis, put forth above, that repeated proper nouns have a discourse-structuring function. If the proportion of proper nouns after episode boundaries is *not* related to the presence or absence of discourse markers, this rules out the discourse-structural function of repeated proper nouns as *interchangeable* with other discourse markers. Such an outcome does not, however, rule out a discourse-structuring function of repeated proper nouns, since narrators might also use *both* discourse markers and proper nouns as signalling devices. In that case the data are not conclusive and do not enable us to differentiate between the identification and discourse-structuring function of repeated proper nouns.

3.8 Visual viewpoint and character perspective

This section addresses two factors that can be subsumed under the umbrella term perspective, i.e. visual viewpoint and character perspective. The hypothesis for the factor visual viewpoint is presented in 3.8.1 below, and will be analysed as a discourse-structural factor, implemented in the visual stimuli, in chapter 5. The factor character perspective is presented in 3.8.2 below, and will be analysed as a text characteristic in chapter 5.

3.8.1 Visual viewpoint

A described situation is always depicted from a specific point of view. The pervasiveness of viewpoint phenomena in language is one aspect of Langacker's (2000 [1995]) notion of *construal*, i.e. the idea that the same objective situation can be portrayed in various ways.

According to Langacker, there are many parallels between vision and conceptualization, and visual viewpoint, either metaphorically or directly, often underlies the specific form of linguistic expression. The prototypical *viewing arrangement*, i.e. the relationship between a viewer and what is viewed, is analogous to the typical *conceptual arrangement*, in which a conceptualizer makes mental contact with a conceived situation. For example, the target of attention in conceptualisation corresponds to the visual focus, which is perceived with highest

accuracy; both in viewing and in conceptualization, the area surrounding the immediate focus decreases in specificity. According to Langacker, "surprisingly many aspects of language structure are plausibly interpreted as manifestations of viewing" (Langacker 2000 [1995]: 203).

One such area is the *level of specificity* with which a thing or situation may be described: The difference between the words *thing*, *object*, *vehicle*, *car*, *dodge*, and *dodge colt* (Langacker's example, 2000 [1995]: 206) is analogous to the "enhanced visual acuity we experience in approaching a distant object: the closer we get, the better we see it" (op. cit. 206).

The *vantage point* of a viewer also has a counterpart in the speaker's construal of linguistic expressions. In the following examples (Langacker 2000 [1995]: 208), the objective situation is the same, but differs in terms of "the direction of mental scanning through a static situation in which, objectively, nothing either moves or changes" (op. cit.: 208).

(1)
(a)The scar extends all the way from his wrist to his elbow
(b)The scar extends all the way from his elbow to his wrist

(2)
(a)As body size increases, there are fewer distinct species
(b)As body size decreases, there are more distinct species

In sum, the same objective situation can be portrayed in various different ways, depending on the construal imposed by linguistic expressions. Many aspects of linguistic construal are rooted in basic characteristics of vision such as vantage point and focus[1]. It seems plausible to assume that discourse segments may also reflect a particular visual viewpoint from which events, objects, and persons are described. A shift in the visual viewpoint from which a situation is described, can also be described as a shift in the continuation of discourse (like an episode shift), and may therefore trigger repeated proper nouns in reference to the main character.

The main reason for this exposition of visual viewpoint and construal has been the implementation of viewpoint shifts in the visual stimuli for the corpus elicitation (to be described in the next chapter). The importance of vantage point for linguistic expression enhances the expectation that viewpoint shifts in the visual representation of a story may have consequences for the linguistic descriptions of the events, and for the proper noun / pronoun alternation[2].

Hypothesis viewpoint shifts
The proportion of proper nouns in clauses which represent or directly follow a shift in the visual viewpoint from which a situation

[1] This idea seems consistent with recent research in embodied cognition, which describes the ways in which language *comprehension* involves the activation of other modalities (Zwaan 2004 inter alia)
[2] In the case of the elicited corpus, this influence is also due to the appearance of secondary characters and the temporary absence of the main character.

is described (relative to the foregoing segment) is higher than the proportion of proper nouns in continuous segments.

3.8.2 Character Perspective

This section describes the factor *character perspective*, adopting the approach and terminology put forth in Sanders (1994). Sanders describes how embedded discourse segments (mental spaces in the sense of Fauconnier 1994) may reflect the 'active consciousness' of characters in the narrative, and how the content and verbalization of speech and thought can be attributed to sources other than the narrator (cf. chapter 2).

The representation of a character's consciousness is represented as an embedded space within the representation of the narrative: "Each time the narrator lets characters speak, or presents their thoughts, an embedded mental space (M) is created within the base space (B). The linguistic markers – space builders – that create these various types of perspective spaces connect the information to certain persons in the discourse" (Sanders 1994: 43).

Perspective can be represented in various degrees of directness or character involvement. Sanders (1994: 42) distinguishes three characteristics of narrative representation which determine the extent to which a character's consciousness is represented in the text. The first aspect of narrative representation responsible for perspective is *propositional content* (P); clauses and / or segments differ with respect to the degree to which propositional content can be attributed to either narrator or character. The *referential center* (R) is determined by the person ('I') who 'speaks' the narrative, and is reflected in verb tense and reference to person. The *deictic center* (D), lastly, relates to temporal and locative characteristics, in that it is determined by "who can say *today* and *here*?" (Sanders 1994: 42). According to Sanders, "[a]ll three aspects, P, R, and D have their center with a person in the text. By default this person is the person who is responsible for the clause's content [...], either the narrator or a character in the text" (Sanders 1994: 42). These characteristics R, P, and D together determine the perspective category of a sentence or discourse segment. On the basis of these characteristics, Sanders distinguishes a number of categories of speech/thought representation, i.e., direct narrative; direct speech / thought; indirect speech / thought; free indirect discourse; and implicit perspective. These will be illustrated below:

Direct narrative

Direct narrative, as in (3) below, is the default perspective category for narrative discourse. In this category, the narrator remains responsible for content (P), deictic center (D), and referential center (R), and there is no representation of a character's speech and/or thought. The following is an example of direct narrative (from Sanders 1994: 41, 43):

(3) That afternoon she did not go out.

Direct Representation Mode
In direct representation mode the referential center (R) and deictic center (D) do not remain with the narrator, but shift to the embedded character. The responsibility for both wording and content of the quoted material (P) lies entirely with the quoted character. Consider example (4) from Sanders (1994: 45): The embedding clause *the spokesman said* creates an embedded space (segment) within the narrator's reality, or, Base space. Since both R and D are located with the embedded character, the represented speech resides within a new Base space.

(4) "The man was clearly on the run from the police," the spokesman said.

Indirect Representation Mode
In indirect representation mode, R and D remain with the narrator. The responsibility for wording of the embedded material is shared between narrator and embedded character; "[t]ypical of the indirect mode is that it is difficult, if not impossible, to distinguish between the narrator's and the character's words" (Sanders 1994: 49). An example of indirect mode is given below (from Sanders 1994: 50):

(5) They said that they had heard shots as well, but knew nothing else.

Free indirect speech / thought
In free indirect discourse, the content (P) and deictic center (D) are located with the embedded character, but the referential center (R) remains with the narrator. However, character-bound deictic expressions are not always present in a clause. In such cases, the free indirect mode perspective can be conveyed by the previous discourse or by expressive elements attributed to the character (e.g., *no, no way* in the example below). According to Sanders (1994: 55), "free indirect mode [...] occupies a special intermediate position between direct and indirect mode because the narrator's and character's voice are intertwined". This perspective category is illustrated by the following example (op. cit.: 53):

(6) He heard something and turned around. There were the three Englishmen again. Now, could they really be tourists? No, no way! They looked just too shabby.

Implicit perspective
In the so-called implicit perspective mode, the propositional content (P), and referential (R) and deictic center (D) remain with the narrator, but the influence of a

character is achieved through other (more subtle) means. As Sanders notes: "even in discourse without direct, indirect or free indirect representation of speech and thought, there may be elements that represent the expressions or perceptions of a character in a more remote way" (Sanders 1994: 55). Implicit perspective may be achieved by a variety of linguistic means such as modal verbs, verbs of cognition and perception, and referential expressions.

Example (7) (example [31] from chapter 2) shows how an indefinite nominal can be used to convey a so-called *implicit perspective* (op. cit. 59). The italicized referent is firmly established as the protagonist of the story. One would therefore expect a definite expression. But the narrator's construal of the scene from the perspective of other characters triggers the use of an indefinite NP.

(7) The police lost track of the car with the kidnapped girl. In the woods near Apeldoorn, a policeman discovered a man who had *a girl* with him. The kidnapper had released her in a nearby street.

In sum, the various types of perspective described here differ with respect to the influence of narrator versus embedded character on the wording and content of the text. The different degrees of perspective types - direct narrative, implicit perspective, indirect representation mode, free indirect representation mode, direct representation mode - range from complete narrator responsibility to complete character responsibility, in that order (cf. Sanders 1994: 68):

NARRATOR
↑
Direct narrative
|
Implicit perspective
|
Indirect representation mode
|
Free indirect representation mode
|
Direct representation mode
↓
CHARACTER

Relation between character perspective and referential form

The research question to be addressed here is whether character perspective influences narrators' online referential choices between proper noun and pronoun. And if that is the case, how does this perspective aspect of proper nouns and pronouns relate to the salience characterization of these expressions?

I expect the proportion of pronouns to increase in contexts which in some way reflect the cognition or perception of the protagonist rather than the narrator (as

illustrated in chapter 2). The expectation is that the more a character is presented as conceptualizer of the proposition of which it is part, the more a narrator will tend to pronominalize the referent.

In the analysis presented in chapter 5, I exclude the category of direct representation mode such as quotations, because in such cases the referential expression shifts to first person. I will also exclude the category of indirect representation mode, because this almost invariably involves syntactic embedding and anaphoric reference to the antecedent in the main clause, which necessarily triggers pronominal reference. (It may very well be the case that this general syntactic restriction also involves perspective, but for this analysis I want to isolate the influence of perspective only).

The hypotheses are as follows:

> **Hypothesis character perspective**
> The proportion of pronouns in free indirect discourse (reflecting protagonist perspective) is higher than the proportion of pronouns in implicit perspective (also reflecting protagonist perspective). And in turn the proportion of pronouns in implicit perspective (reflecting protagonist perspective) is higher than that in direct narrative (reflecting the narrator perspective).

The next hypothesis relates to the view that *any* 'outside' perspective on a character, whether from the narrator or another character, triggers the use of proper nouns rather than pronouns[3]. The hypothesis is as follows:

> **Hypothesis secondary character perspective**
> The proportion of proper nouns in references to the protagonist in cases in which the embedding clause reflects a secondary character perspective (i.e. a character other than the protagonist) is higher than in cases in which the clause represents either direct narrative or protagonist perspective.

In chapter 5 I will also address whether the factor character perspective may 'override' the tendency for narrators to repeat proper nouns at the beginning of new episodes.

> **Hypothesis perspective and episode boundaries**
> If the onset of a new episode is a perspectivized clause (reflecting protagonist perspective), the proportion of proper nouns in reference to the protagonist is lower than if the new episode is introduced through direct narrative.

---

[3] This phenomenon is also illustrated in chapter 2, in example (35)

3.9 Perceptual Attention

Discourse structure and referent salience can also be affected by 'surface' attention fluctuations, not related to the conceptual content of the story. Evidence suggesting this possibility is presented in a study by Tomlin and Pu (1991). This study suggests that both episode structure *and* the use of (repeated) proper nouns may be a direct function of attention allocation, rather than a reflection of conceptual narrative content. Tomlin & Pu present an elicitation experiment in which participants produced oral narratives on the basis of a series of pictures presented to them. The same series of slides (pictures) was presented to participants according to three different modes. In one presentation mode slides were presented to participants one by one. In the other modes, they saw two pictures on a single slide; either in an odd version ([1] – [2-3] – [4-5] – [6-7] etc) or an even version ([1-2] – [3-4] – [5-6] – [7-8] etc).

The main findings of this study indicate that, no matter what mode of presentation participants were confronted with, they usually referred to the narrative's protagonists by using full nominals (such as proper nouns) after a slide break. Based on these findings, Tomlin and Pu propose that episode structure links up to breaks between picture slides, i.e. to perceptual attention, rather than to narrative structure breaks. The proper noun/pronoun alternation is claimed to be a function of the episodic organization of discourse, which *in turn* is determined by allocation of attention during production, in this specific case, by the clustering of pictures within the same perceptual field. It is further proposed that "the alternate selection of nominal and pronominal NPs is governed by a structural coding; that is, by a rule of the functional grammar. [...] [T]he selection of nominal or pronominal NP is determined causally by the memorial and attentional status of information during discourse production" (Tomlin & Pu 1991: 74). Both referential distance and conceptual paragraphs or episodes, according to this view, are claimed to be mere *correlates* of the continuation or shifts of *attention* during discourse.

The results and conclusions drawn in Tomlin & Pu (1991) are not fully convincing: The material used in Tomlin and Pu arguably does not fully reflect a conventional episode structure (as described in 2.5.6), independent of the presentation mode; the depicted episodes rested heavily on the notion of iteration: a small animal was chased and eaten by a bigger animal, then an even larger animal chased the second one, and ate it, and so on. This resulted in a series of slides in which almost any gap could be treated as an episode boundary. In addition, there were not just one but several main characters to be maintained during the discourse. These aspects make it more plausible for participants to take the presentation mode as structuring principle.

The present study aims to analyse the influence of perceptual attention on referential form in the verbalization of a full-fledged story with only a single protagonist. Although the perceptual attention factor is assumed to affect referential

form, I expect narrative content (e.g., episodes) to be more influential: I expect that in the assignment of referential form, the narrative structure overrides 'surface' attention fluctuation.

Hypothesis perceptual attention
The proportion of proper nouns following a shift in perceptual attention is higher that the proportion of proper nouns in continuous stretches of discourse

Hypothesis perceptual attention and other discourse factors
The proportion of proper nouns following a narrative shift (episode or viewpoint, cf. below) is higher than the proportion of proper nouns following a shift in perceptual attention.

3.10 Summary

The aim of this chapter has been to present the operationalization of and hypotheses for the factors that are assumed to affect referential choice in written Dutch narrative. The relevant factors for reference maintenance to main characters comprise intervening referents, syntactic function, linear position, referential distance, episode structure, visual viewpoint, character perspective, and perceptual attention. This chapter also includes an additional hypothesis concerning the possibility of a discourse-marking function for repeated proper nouns, in addition to their basic identifying function. Some of the hypotheses presented here will be refined on the basis of properties of the visual stimuli described in the next chapter. The hypotheses will be tested through the analysis of the collected corpus, presented in chapters 5 and 6. The elicitation of this corpus will be described in the next chapter.

Chapter 4
Collecting production data
Elicitation of a corpus of written narratives

4.1 Introduction

This chapter addresses a number of methodological issues concerning the production task and the collected corpus. First, the elicitation of production data is situated within the background of a theory of language production. In section 4.2 I present the model of language production adopted in this study, i.e. Levelt's (1989) *Blueprint for the speaker*. In 4.3 it is demonstrated that a visual 'comic' represents a genuine narrative, comparable to written narratives, and containing narrative structural characteristics. I also present an overview of the processing mechanisms expected to be involved in the specific elicitation task used here. The rest of the chapter is concerned with the visual stimuli, the experimental task and an illustration of the elicited text: Section 4.4 describes the visual stimuli and the way in which relevant factors were implemented. Section 4.5 describes the production task aimed to construct a corpus of narrative texts. In section 4.6 the relevant factors as described in chapters 2 and 3 are illustrated using a single full-length story from the collected corpus.

4.2 A model of language production

Levelt's (1989) model of language production (cf. also Levelt et al. 1999) will serve as a general framework for the account of the production of proper nouns and pronouns based on the corpus analysis. For current purposes, I adopt Levelt (1989) rather than the more recent Levelt et al. (1999), since the former comprises a fairly detailed account of the production of referential expressions, to be briefly addressed in chapter 7. In order to illustrate how Levelt's model relates to the production task, this section gives a general overview of the model.

In Levelt's *blueprint for the speaker*, the language production system comprises four separate stages in the production of an utterance: conceptualisation, formulation, articulation and comprehension (feedback). The *conceptualizer* first builds the prelinguistic conceptualization of a proposition, i.e. the *preverbal message*; the preverbal message forms the input to the *formulator*, which is responsible for the grammatical and phonological encoding of the message; its output consists of a *phonetic plan* that functions as input to *the articulator*; the *articulator*, lastly, is responsible for the motor action that is involved in the

production of overt speech. The (on-line) writing mode (used in this study) involves a component for the motor action involved in (type) writing, equivalent to the articulator involved in speech. Since this study is mainly concerned with the earlier stages of production that are concerned with the choice of referential expression types, I will not address this component. Apart from the production components, the language *comprehension* system is also involved in language production: amongst other things, it provides feedback to either 'inner speech' (i.e. the output of the formulator) and to explicit linguistic expressions.

The following figure (taken from Levelt 1989: 9) schematically illustrates the language production process:

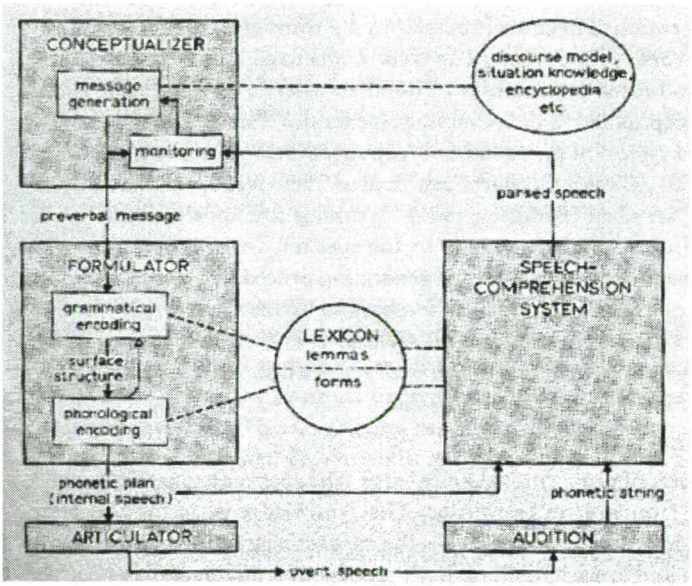

Figure 1. The language production blueprint

The production components are seen as relatively autonomous modules with specific tasks. They do, however, overlap in terms of processing time: Levelt's production system is based on *incremental* processing (cf. Kempen and Hoenkamp 1987) whereby, say, the *formulator* can start working on a fragment of the (still incomplete) output from the *conceptualizer* module.

The production blueprint distinguishes between declarative and procedural knowledge, and both systems are involved in the generation of language. The components described above are procedural in nature; they consist of series of procedures involving so-called condition/action pairs (i.e. IF...THEN... pairs). The representations that function respectively as input and output of these components consist of declarative knowledge. In figure 1 above, the circles represent declarative knowledge (e.g. lexical knowledge, encyclopedic knowledge), the boxes represent the processing components (procedural knowledge), and the terms in between these

boxes represent declarative input/output structures that mediate between the components.

For the current purpose of the elicitation task, the component that is most relevant to the translation of pictures into words (conceptualizing pictures for linguistic expression), is the conceptualizer, to be briefly described below.

The conceptualizer

In Levelt's model, the conceptualizer is the processing component that builds preverbal messages, comprising a number of successive steps. These processes can be broadly categorized into macroplanning and microplanning: Macroplanning involves 'bookkeeping' of the ongoing discourse and the selecting and ordering of the content that is to be expressed, and involves most of the attentional resources. Macroplanning results in a series of ordered speech acts. Microplanning consists of filling in the content of these speech acts, involving the distribution of topical and new information, and the assignment of a propositional format.

These processes result in preverbal messages, the structures that serve as input for further linguistic expression (cf. figure 1 above). In Levelt's words, "[t]he preverbal message is a semantic representation that refers to some state of affairs" (Levelt 1989: 73). Preverbal messages are all composed out of basic semantic categories, such as PERSON, THING, EVENT, ACTION, STATE, TIME, PLACE, DIRECTION, ATTRIBUTE and MANNER. A preverbal message always represents one such semantic category, and may itself be built up hierarchically out of several (other) semantic categories. The arguments in a semantic representation usually fulfill one or more abstract thematic roles, such as *agent*, *patient*, *theme*, *recipient* and *instrument*. The *agent* for example represents the main argument in a causative structure (cf. Levelt 1989: 92).

So far, I have given a brief general description of the production model that functions as background to the present study. As we shall see in subsequent sections, the components of this model also form part of the processes of reading and describing comics. Chapter 7 briefly addresses how the observed referential patterns (based on the corpus analysis of chapters 5 and 6) might be accommodated in a production model such as Levelt's.

4.3 Visual stimuli: verbalizing comic pictures as production task

For the collection of a corpus of discourse production data, participants were asked to write texts on the basis of series of pictures depicting a narrative, i.e. a 'comic'. The method of using visual stimuli in order to elicit language data has been used in a number of other studies as well, including Chafe (1980), Tomlin (1987), Vonk et al. (1992). In addition, visual stimuli are also often used in *comprehension* research, e.g. eye-tracking research within the so-called 'visual world paradigm' (Cooper 1974).

The question to be addressed in this section is: how does a picture viewing or, comic reading task trigger the semantic structures (including narrative characteristics) used in the language production process described above? In other words: how does the comic representation (information which in Levelt's model can be categorized with the component containing a.o. 'situation knowledge' - represented in the schema above) end up in the conceptualizer? This section aims to shed more light on this question.

One of the prerequisites for the elicitation method adopted is that the experimental task used here reflect a genuine production process, comprising production components like the ones described above. Recent research in embodied cognition (Barsalou 1999, Zwaan 2004) confirms that there are strong relations between linguistic representations and other (e.g. visual) modalities, which makes it all the more plausible that information from visual modalities (for example pictures and comics) can be made readily available for linguistic expression. The close association between visual and linguistic processing is for example also assumed in Schnotz (2001), who proposes that visual representations result in mental models from which propositional inferences can be derived. If one takes a more modular view of production processes, involving modality neutral propositions rather than embodied representations, this does not undermine the validity of the elicitation task: Jackendoff (1987) describes the correspondences between visual (Marr 1982) and linguistic / conceptual representations, and eloquently argues that visual representations readily trigger the semantic representations (Jackendoff 1983, adopted in Levelt 1989) underlying linguistic expression. Further, the modality neutral *indexation* of visually perceived entities, (what Jackendoff 2002 terms the 'indexical feature' of percepts, cf. the description in chapter 2) enables viewers to categorize consecutive perceptions of a single entity as 'one and the same', which in turn allows for maintained corresponding reference in discourse. For these reasons it can be assumed, in my view, that visual stimuli such as comics trigger genuine language production processes.

The remainder of this section addresses a number of aspects of the comic genre: I will illustrate how comics display and trigger semantic and discourse-structural characteristics. Also, I will describe the process of reading comics, and how comic reading may guide the initial stages of discourse production, comprising the selection and planning of the content to be expressed.

4.3.1 Characteristics of the comic genre

Comics: Pictures and words

The dictionary definition of comics, or, sequential art, as McCloud (1993) calls it, is as follows: "Juxtaposed pictorial and other images in deliberate sequence, intended to convey information and / or to produce an aesthetic response in the viewer" (McCloud 1993: 9). Usually the comic genre employs both pictures and words to tell a story. McCloud (1993: 152) lists a number of ways in which words and pictures

may contribute to conveying a story. I will illustrate some of the combinations below:

In *word specific* combinations such as illustrated in figure 2, "pictures illustrate content that is itself largely conveyed through text. (McCloud 1993: 153).

Figure 2. Word specific combinations

In *picture specific* combinations, it is the other way around: "words do little more than add a soundtrack to a visually told sequence" (ibid.):

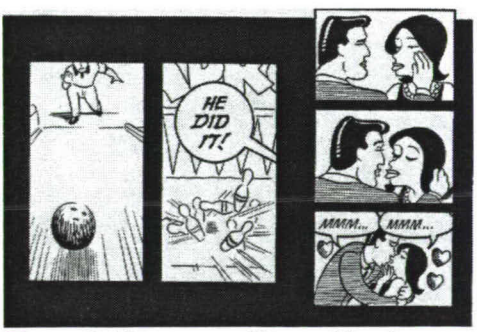

Figure 3. Picture specific combinations

In the *additive* combination, illustrated below, words and images reinforce each other (McCloud 1993: 154):

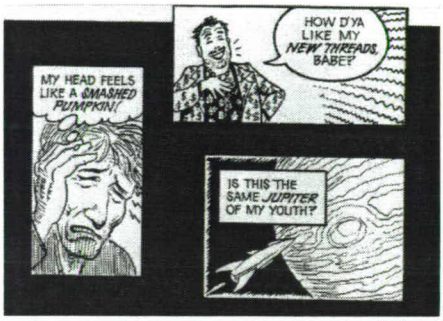

Figure 4. Additive combination

The most common type of combination of words and pictures, according to McCloud, is *interdependent* combination, "where words and pictures go hand in hand to convey an idea that neither could convey alone" (McCloud 1993: 155).

Figure 5. Interdependent combinations

The balance between words and pictures in interdependent combinations may fall anywhere between picture specific and word specific combinations: "Generally speaking, the more is said with words, the more the pictures can be freed to go exploring and vice versa" (McCloud 1993: 155). To anticipate somewhat on the description of the visual stimuli, the objective in the design of the comic is precisely the opposite, namely that it should rest heavily on pictures rather than words. The ability of pictures alone to 'tell the whole story' is demonstrated below.

The language of comic pictures

According to comic artist Eisner, comic reading can be seen as analogous to text reading. He argues that "[t]he structures of illustration and of prose are similar" (Eisner 1985: 8). Using numerous examples he shows that the grammar of sequential art constitutes a sort of language in which events and characters take on the role of predicates and subjects/objects. Take for example the series of pictures in figure 6, from Eisner (1985):

Figure 6. Images without words, (Eisner 1985:24)

From our ability to identify two (rather than 18) main characters throughout the series of pictures, we can conclude that the reader naturally attaches indexical features to the depicted entities; each of the two depicted characters is perceived as various instances of one and the same 'thing': the characters are portrayed from different angles, and at different levels of specificity and detail. Still, because of the indexical features attached to the initial percept, we can recognize and 'track' both the man and the woman as individual entities throughout the series of pictures.

Further, this comic demonstrates that pictures, even without the use of words, may evoke an elaborate story, encompassing narrative characteristics such as

character, dialogue and action: The characters are depicted as stereotypes: the smoking and beer-drinking 'couch-potato' husband, and the nagging, yelling and crying wife. As Eisner points out, we may readily imagine some of the dialogue, the wife complaining about her no-good husband etc. The pictures may even invite some empathy for the husband, who probably 'just can't take it anymore', by depicting the shooting from his point of view.

Note that some of the conceptual-semantic characteristics of preverbal messages, as they are described in Levelt's model, are readily available from the interpretation of the comic: We can clearly distinguish the basic semantic categories of PERSON (the characters), THING (e.g. the television, the beer, the gun), EVENT (the shooting event) and ACTION (the woman crying, the man shooting). In addition, the pictures impose certain thematic roles on the persons and objects depicted, analogous to the thematic roles distinguished in preverbal messages: The man sitting in front of the television acts as *theme*; the wife smashing the beer out of his hands fulfils the *agent* role; in the shooting event, the man is the *agent*, the woman fulfils the *patient* role, and the gun has the role of *instrument*. We may conclude that the pictures immediately provide some basic building blocks of preverbal messages. It appears that comic reading yields a semantic representation that may correspond closely to the preverbal messages used in language production.

The last picture in figure 10 stands apart from the previous ones in several ways: It is the only one that is visually 'framed', in that it is visually outlined to stand apart from the rest of the comic; also, there is only one character left; and the setting is different. It might be called the equivalent of the onset of a new episode in text. The way narrative structure is conveyed in comics will be further described below.

Narrative structure in comics

In comics, McCloud points out, time and space can both be displayed through visual means (1993: 100); the flow of time is expressed through the spatial arrangement of the pictures (apart from accompanying text, that is). As pointed out in chapter 2 (cf. Zwaan & Radvansky 1998 inter alia) both timing or temporal setting and spatial setting are important parts of narrative structure. The sense of timing can be influenced by the number, shape and size of the various panels used to depict a scene. But it can also be illustrated by the pictures themselves. The sequence of pictures in figure 7, from Eisner (1985: 30) illustrates how the passing of time can be conveyed spatially, i.e. by the pictures themselves:

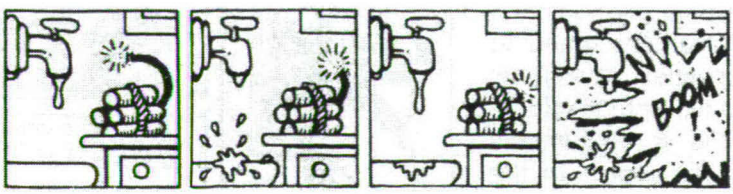

Figure 7. Timing

In this case, the reader may 'measure' elapsed time by his knowledge of the time that is involved in water dripping from the faucet, combined with the number of panels depicted.

Changes in spatial and temporal setting, and other aspects of narrative structure, may be conveyed in various ways. McCloud (1993) distinguishes several *types of transitions* between picture panels. A number of them are illustrated below:

Moment-to-moment transition panels, illustrated in figure 8, depict the same scene from one moment to the next with little alteration.

Figure 8. Moment-to-moment transitions

Action-to-action transitions feature a single subject involved in related events, as in figure 9[1]:

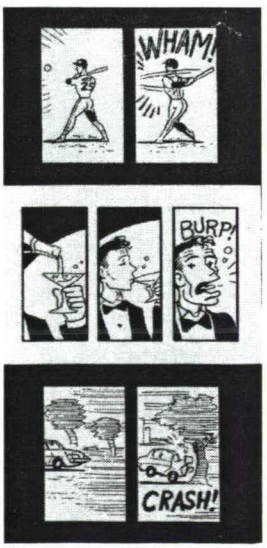

Figure 9. Action-to action transitions

[1] The action-to-action transitions in the consecutive pictures shown here also seem to display telic aspect.

Subject-to-subject transitions, illustrated in figure 10, involve several subjects or characters but remain within a single coherent scene or idea. These progressions require more reader involvement, to establish a meaningful transition within a scene. That is, the reader is required to make inferences concerning the events that are supposed to happen between consecutive panels, or concerning the causal connections between them.

Figure 10. Subject-to-subject transitions

Scene-to-scene transitions, depicted in figure 11, reflect greater shifts of time and space, and often require deductive reasoning on the part of the reader. These transitions seem to reflect prototypical *episode changes*.

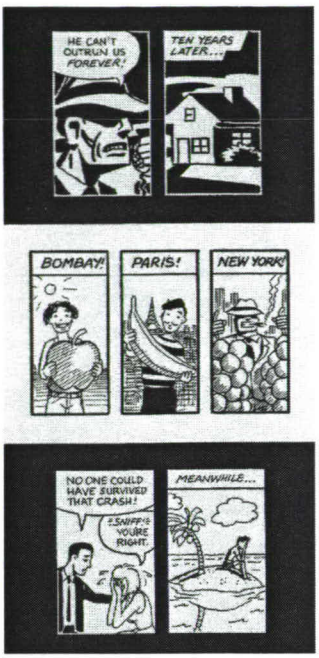

Figure 11. Scene-to-scene transitions

Aspect-to-aspect transitions are transitions which do not impose a temporal linear order, but which connect panels that highlight different aspects of the same place, idea or mood. This is illustrated in figure 12:

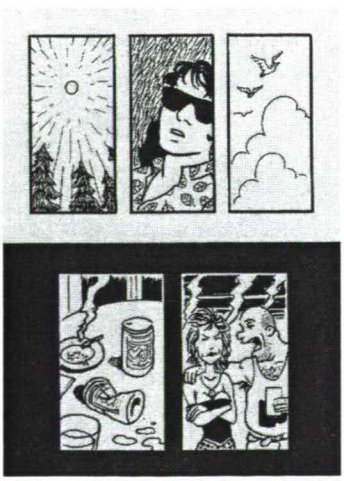

Figure 12. Aspect-to-aspect transitions[2]

[2] Note that the term 'aspect' here is used in its 'common' sense, rather than the linguistic sense.

McCloud observes that in straightforward narrative comics the use of action-to-action transitions is by far the most frequent, and also, to a lesser extent, subject-to-subject and scene-to-scene transitions.

Visual viewpoint in comics

Visual viewpoint is an integral part of comic stories. Viewpoint can be characterized as the visual vantage point from which a single situation or event is depicted. The visual modality of comics necessarily imposes a single visual viewpoint within a particular picture (or panel). As Eisner puts it: "Functioning as a stage, the panel controls the viewpoint of the reader; the panel's outline becomes the perimeter of the reader's vision and establishes the perspective from which the site of the action is viewed" (Eisner 1985: 88).

Transitions between panels may convey both a continuation of the current viewpoint, or a shift in viewpoint. In terms of the transition types illustrated above, subject-to-subject and aspect-to-aspect transitions typically involve viewpoint shifts; they depict a single coherent situation or event, but from different visual angles. Action-to-action transitions, involving different actions of the same character, typically convey a continuation of viewpoint. (The artist may however impose subtle changes in viewpoint by portraying not the panel but the *character* from different angles).

The function of viewpoint, according to Eisner, is "to manipulate the reader's orientation for a purpose in accord with the author's narrative plan" (Eisner 1985: 89). Consider figure 13, from Eisner (1985: 89):

Figure 13. Viewpoint

Eisner's account of viewpoint in these panels is as follows: The first panel, conveying an 'eye-level view', "informs the reader of details such as the commanding action of the soldier's hand" (Eisner 1985: 89). The second panel presents an 'over-head view', which "give[s] the reader a clear uninvolved view of

the setting and the events to follow" (Eisner 1985: 89). In the third panel the viewpoint is presented from 'ground level', so as to involve the reader and make him 'feel' the explosion. The last panel presents a 'worm's eye view', which also enhances the reader's involvement.

Lastly, note that visual viewpoint is different from the notion *character perspective* as described in chapters 2 and 3. The former involves the visual vantage point of a particular picture, whereas the latter notion involves the (implicit or explicit) representation of the narrator's or a (main or secondary) character's conceptualization in the text (Sanders 1994).

The factor visual viewpoint is analysed as a variable implemented in the visual stimuli for the elicitation task, to be described in section 4.4 below. The factor character perspective is not implemented in the pictures, and will be analysed as a text characteristic.

4.3.2 Reading and verbalizing comics

The aim of this section is to describe the production of text on the basis of comic reading.

The process of reading comics

In order to relate comic reading to text production, we need a characterization of the aspects of comic reading that may guide or trigger macroplanning and microplanning processes in discourse production. As for microplanning, the previous section demonstrates that the semantic 'material' needed for the composition of preverbal messages is clearly available in comic pictures. As pointed out in 4.2 above, macroplanning involves the managing of attention and the selection and ordering of information for expression. These planning processes may be guided by the content of the pictures (cf. the narrative characteristics shown above), but also by the framing of the pictures (the way they are presented on the page), and thereby the allocation of attention to the pictures.

Henderson & Ferreira (2004) present an overview of the processes involved in scene perception. They find that "[eye] fixations cluster to both visually and semantically informative scene regions" (2004: 28). Further, the 'gist' of a scene is apprehended very quickly, well within a single fixation (2004:15). These observations seem to indicate that after or while looking at pictures, information for the composition of preverbal messages is available very quickly. This in turn supports the online nature of the production task used here.

Further support for the close association between attention flow in picture viewing and language production can be found in Holsanova (2001). She investigates the way people perceive and describe pictures (in fact, how they describe a single complex picture). On the basis of her study on eye-movements in the description of complex pictures (through eye-tracking research), she claims that visual perception, like language production, proceeds in attention spurts (eye movements), moving like a spotlight from one focus to the next. The appropriate

unit of visual perception, it is argued, consists of a series of fixations that together form a focus of interest. This *visual superfocus* roughly corresponds to the *verbal superfocus* consisting of various intonation units, which together form a longer prosodic sentence. Since we are investigating written language, we can consider a written sentence (possibly consisting of several clauses), as the equivalent of such a prosodic sentence. As for the description of pictures used here: a single (relatively simple) picture might yield one visual superfocus, or, focus of interest, also corresponding to a verbal unit of interest (a sentence consisting of one or several clauses).

In comic reading, picture viewing is guided by the conventions of the genre. Unlike movies, comics present only visual fragments, and the reader is expected to contribute the 'flow' of motion and change[3]. The visual attention spurts and foci of interest are determined by the 'panels' (pictures), and follow a fixed conventional order, as illustrated in figure 14:

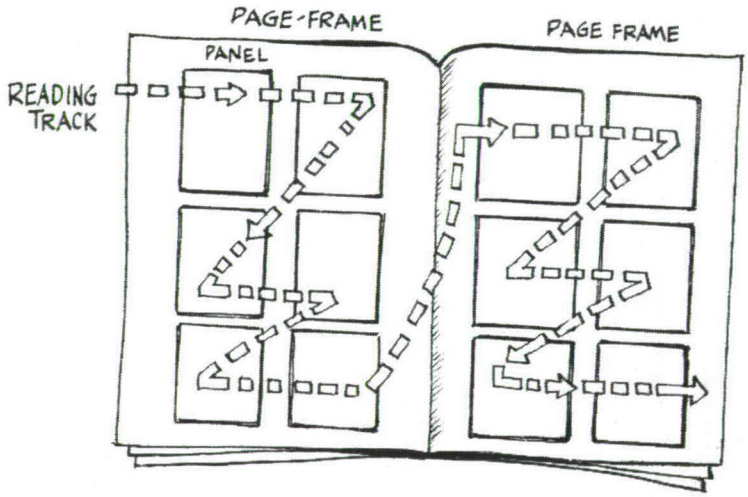

Figure 14. The conventional reading track (Eisner 1985: 41)

Attention shifts may be expected to occur between consecutive pictures, and mainly between consecutive pages (cf. the variable page break, described in section 3.4 below). Further, we may expect that each picture evokes a 'focus of interest', interpreted in terms of categories such as EVENT (e.g. the depiction of an action), STATE (e.g. the depiction of a situation or setting), etc. (cf. the interpretation of figure 10). The semantic representation may of course include dialogue or (in the visual stimuli used here) text contained in the comic pictures.

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[3] Strictly speaking, movies also consist of consecutive frames, but they are consciously perceived as uninterrupted visual sequences.

As McCloud (1993) points out, comic reading involves more than the consecutive interpretation of pictures: The pictures in comics – just like the perceived discourse and environment in everyday life – cover only part of the reality they are intended to convey; "this phenomenon of observing the parts but perceiving the whole" (McCloud 1993: 63) is what McCloud calls *closure*. Closure (a concept from 'gestalt' psychology), or, (henceforth) inference, is committed in every day life, by mentally 'filling in' parts of the surroundings that we do not directly observe, and comics rely heavily on this human capacity for inferring what must happen between consecutive pictures. Inference can be said to occur especially in the so-called 'gutter', the space in between the picture panels, where readers use their background knowledge to establish a meaningful relationship between the panels. McCloud puts it as follows: "Comics panels fracture both time and space, offering a jagged, staccato rhythm of unconnected moments. But closure [inference] allows us to connect these moments and mentally construct a continuous, unified reality" (1993: 67).

Comic reading and storytelling.

How do visual stimuli, in this case visual 'comic' narrative, guide the first - conceptualizing - stages of the language production process? The process of comic reading can be related to *planning* in the discourse elicitation task: Given the fact that participants were aware of the production task while reading, both the managing of attention and the ordering of information can be expected to follow the reading convention illustrated above.

As for the selection of content: pictures may vary greatly in the amount of information conveyed by a single picture. Also, readers may differ in the amount of detail in which they interpret or describe pictures. As pointed out above, the pictures and resulting foci of interest may roughly correspond to semantic representations of the categories EVENT, STATE, etc. Given the nature of the stimuli used here (relatively simple pictures) and the task (writing one sentence per picture), the interpretation of a single picture may correspond to one or two preverbal messages.

Lastly, both visual and textual techniques of narrative structure – e.g., text boxes indicating spatio-temporal setting, viewpoint characteristics, and depiction of (changes in) surrounding - and the process of inference, described by McCloud as 'closure', may contribute to the conception of a *structured* narrative comic. This assumption in turn leads to the expectation that narrative structural factors can plausibly be implemented in comic pictures, and that they may be recognized and expressed as such by the narrators. The next section describes the visual stimuli and the way discourse factors were implemented.

4.4 The Visual Stimuli

This section presents a description of the series of pictures used in the elicitation task. It is shown that the pictures display narrative structural characteristics similar to those distinguished by McCloud and Eisner.

The material consisted of 25 pictures. They told the story of a little girl and her hand-made dragon, and the girl's adventures during the holidays. In this visual narrative, three discourse-structural factors were implemented as independent variables. Two (within participant) factors are based on the 'inherent' conceptual structure of the narrative: episode and visual viewpoint. One (between participant) factor – page break - is based on attention flow during production triggered by the 'external' perceptual factor of turning the page.

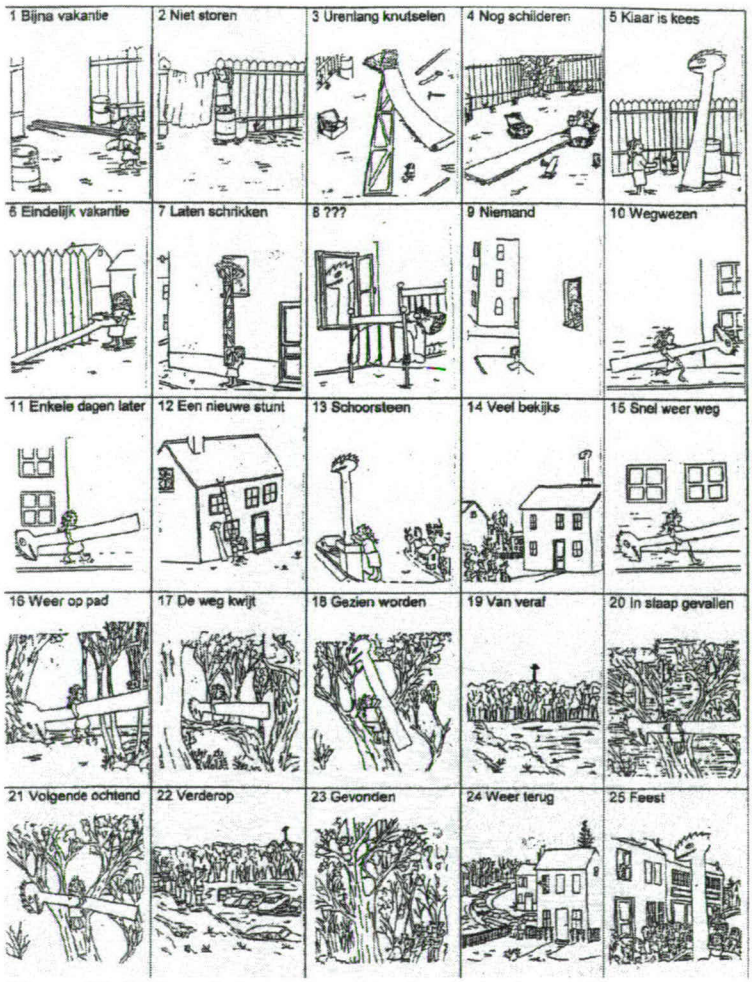


Figure 15. Series of pictures used in the elicitation task

4.4.1 Episode shifts

In chapters 2 and 3 I proposed *episode transitions* as a relevant factor for referential choice: Episode transitions involve one or more changes in event parameters such as character, motivation, cause, time, and location. They represent conceptual shifts of variable degree and kind.

The episode transitions in the pictures are characterized by visually and verbally indicated changes in location and time (these two situation model parameters are associated with prototypical episode structure, cf. 2.5.6). In terms of the transition types illustrated in 4.3 above, they are most similar to 'scene-to-scene' transitions. Episode boundaries were implemented by both verbal cues (for example adverbial phrases such as 'next morning' in picture 21), and by the visual depiction of a new location. Pictures 10 and 11 in the comic represent such an episode transition. The following example, taken from the corpus, shows how the episode transition is translated into a textual episode transition:

(1) De buurman is razend als hij merkt wat er aan de hand is en Maartje zet het op een lopen. *The neighbour is furious when he finds out what is going on and Maartje quickly runs away.* [picture 10]

Enkele dagen later trekt Maartje met de draak op zoek naar meer avontuur. A couple of days later Maartje takes her dragon and starts looking for some more adventure. [picture 11]

The 25 pictures consisted of five episodes, five pictures each. This resulted in 4 pictures involving episode shifts, 20 episode continuations, and one introductory picture. The first pictures of new episodes are pictures 6, 11, 16 and 21.

The reliability of the episode shifts was investigated in a pre-test. Ten participants were given an overview of the comic ordered on one A3 page, within a 4 x 6 x 1 matrix. They were asked to mark the major event transitions in the pictures. Nine participants successfully split up the pictures into episode units, one participant failed to mark the last episode transition. The pre-test confirms that the episode structure has been successfully implemented in the pictures.

4.4.2 Viewpoint shifts

The second discourse structural factor is related to *visual viewpoint* (cf. the description above). The viewpoint shifts were implemented in the visual narrative by leaving the protagonist referent out of one or two pictures, after which she returned in the next picture. The latter picture, in which the protagonist reappears, is the target viewpoint shift picture, i.e. the one that is assumed to affect referential form. The target viewpoint pictures following such viewpoint shifts are (9), (10), (15), (20), and (23). As for pictures 9 and 10, the protagonist returns in picture 9, but, since she is depicted in the periphery of the picture, most narrators only reinstate

reference to her in picture 10. Therefore, both 9 and 10 are included as viewpoint shift pictures.

In terms of the types of picture transitions, these viewpoint shifts are similar to 'subject-to-subject' transitions. An example of a viewpoint shift can be seen in pictures 7 through 9: These pictures alternately display the protagonist (7), a secondary character (8), and then the secondary character and the (backgrounded) protagonist (9). Only in picture (10) does the protagonist re-appear as the only character, in the center of the picture. Similarly, pictures 18 through 20 display the main character (18), a 'distant' view of the same scene (19), and then again the protagonist (20). Another viewpoint shift is displayed in pictures 13 through 15. Note that these viewpoint shifts, contrary to episode transitions, remain within a single coherent narrative scene; each of the viewpoint shifts was implemented within the boundaries of one episode.

The viewpoint shifts were expected to affect referential form not only through representing discourse-structural shifts, but also through their influence on referential distance (the absence of the main character) and on intervening reference (the appearance of other characters) – all of which may naturally coincide in spontaneously produced discourse. The following excerpt from the corpus shows how the viewpoint shift and the return to protagonist reference, in pictures 18 through 20, is verbalized:

(2) Maartje klimt in een boom en Ø steekt haar draak in de lucht om zo gezien te worden. *Maartje climbs into a tree and Ø sticks her dragon into the air so that [she] can be seen.* [picture 18]

Een eind verderop staat een massa volk naar de draak te kijken en Ø vragen zich af wat dat te betekenen heeft. *From a distance a crowd of people are watching the dragon, wondering what it means.* [picture 19]

Maar helaas, Maartje is in slaap gevallen en niemand kan de draak nog zien. *But unfortunately Maartje has fallen asleep and no one can see the dragon anymore.* [picture 20]

4.4.3 Page breaks

Chapter 3 proposed shifts in perceptual attention as a factor triggering repeated proper nouns. This factor was implemented in the visual stimuli through the variable *page break*. This variable was defined as page breaks between series of pictures and varied over conditions. The 25 pictures were presented to the participants in one of four different conditions, differing in the number of pictures presented on the same page. For the four conditions, this resulted in a different number of page breaks. In two conditions, the pictures were presented two by two; in condition 1, the first page started with picture 1 only, in condition 2, pictures 1 and 2 were presented on the first page. This means that the pictures that were presented on the same page in condition 1 were separated by a page break in condition 2 and vice versa. In the

other two conditions (3 and 4), the pictures were presented in five and six pictures per page respectively. This allowed participants to look ahead and conceptualize a larger part of the pictures and episodes within the same perceptual unit of the page. In condition 3, containing five pictures per page, all page breaks coincided with episode breaks, whereas in condition 4, containing six pictures per page, there were no page breaks that coincided with episode transitions.

As pointed out in chapter 3, this variable follows up on research concerning the relation between attention, episode structure and referential form (Tomlin & Pu 1991, cf. chapter 3, section 3.9). Another reason for implementing this variable is the following: such 'surface' attention shifts seem to be inevitable if we want to visually elicit a story of some length: The objective of the elicitation is to capture online narrative production rather than the production of a fully represented story that is being re-told. Consequently, the 25 pictures must be offered in a somewhat 'digestible' format consisting of a limited number of pictures at a time, rather than all at once. This in turn leads to a number of page breaks in which the subjects will have to turn the page in order to perceive the continuing story. In order to capture the influence of attention shifts not directly related to narrative structure, we have implemented page breaks as a variable. This allows us to disentangle attention shifts from narrative structural shifts, both of which may affect referent salience and referential form.

To sum up, the three variables for the visual stimuli were implemented over conditions as follows: Episode and perspective shifts remained constant for all conditions and participants; perceptual shifts (page breaks) varied over four conditions. The appendix to this chapter gives an illustration of the implementation of variables in the four different conditions.

4.5 The construction of a corpus of written narratives

This section describes the measures taken to constrain the output data (4.5.1); and it describes the procedure of the elicitation task (4.5.2).

4.5.1 Variation in narrative production

A possible disadvantage for production research is that it is much less *constrained* than comprehension studies, which use methods such as probe recognition, eye tracking and reading times. In processing experiments dealing with anaphora resolution the variables affecting referential from are predominantly implemented in *text*. So the language in a comprehension study remains constant, whereas speakers and writers produce very different texts even in similar situations. A number of measures were taken to control the variation in text production, so as to ensure that the participants produced comparable narratives.

First, we designed a series of pictures aimed to evoke a homogeneous and straightforward narrative, containing unambiguous clues as to narrative structure. Although inference allows for considerable variation in the interpretation of the 'comic' story, we attempted to provide unequivocal clues as to the basic content of the depicted narrative: The pictures convey a fairly simple and straightforward children's story; they focus on recognizable actions rather than, say, depicting fragments, thoughts or elaborate visuals. Second, we asked participants to restrict their narrative production to one sentence per picture.

Third, we added some verbal clues, in order to ensure comparable interpretations of the narrative structure. Each picture contained in the upper left a few cue words, such as e.g. temporal adverbials, 'the next morning' etc. These discourse markers of course do not contain any relevant referential expressions, and the participants did not have to use them explicitly[4].

These measures – a straightforward simple visual narrative, one sentence per picture and verbal cues - helped to ensure that the 'output' production data consist of comparable stories.

4.5.2 Elicitation task

This section describes the procedure of the elicitation task.

Participants
305 participants took part in the production task. The participants were all students in their first year of translation college at Ghent University, taking part in a regular advanced course in discourse analysis. They were all native speakers of Dutch. Participation in the experiment was part of the course.

Procedure
The task was carried out in 5 plenary sessions. All participants received a closed booklet and a pre-designed tabular page. The experimenter read the instruction. Students were asked to consider the task as a regular exercise in discourse coherence. They were asked to write a coherent and attractive narrative that could be part of a book for children about 10 to 12 years old.

Participants were asked to write one sentence (main clause and possibly subclauses) per picture, and to write their narrative on the tabular page, with two columns and 25 rows. The first (narrow) column contained the identification character for each of the 25 pictures; in the second column, participants had to write their narratives.

The participants did not see the pictures until the start of the writing session. They were asked to finish each page of the booklet *before* turning to the next page. They were also asked to work in two phases: a first phase in which they

[4] In addition, these cues enable us to investigate the (complementary) distribution of referential expressions such as proper names relative to discourse markers such as temporal or spatial adverbials (cf. chapter 3, section 3.7.3, and chapter 5, section 5.5.3).

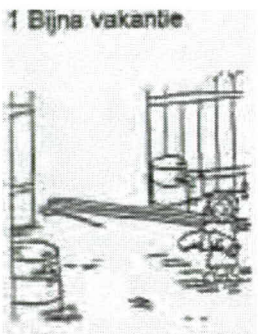
simply constructed the narrative sentence/picture per sentence/picture by using a black or blue pen. After this first round, they were asked to take a red pen and revise where they thought it was necessary. The revisions were not included in the statistical analysis of the data. Rather, the second phase ensured that the results of the *first* one consisted of online rather than revised production data[5]. After the instructions, participants executed the task at their own pace. All sessions were finished after 20 minutes.

This controlled production task represents a middle course between a free writing task and eliciting controlled writing in terms of e.g. cloze tasks. This procedure enabled us to collect online but comparable data.

4.6 Illustration and analysis of a single story

The corpus story presented below serves as a first illustration demonstrating how the narrators verbalized the stories. In what follows I will suggest how the consecutive references to the protagonist can be accounted for in terms of the factors described in chapters 2 and 3, and I will point to the sections where the various factors are analysed in subsequent chapters.

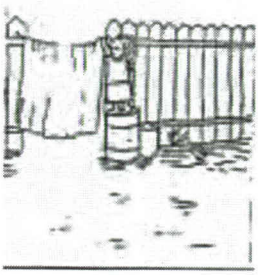
Elicited Dutch Narrative:



1. Enkele dagen voor de zomervakantie beslist **Maartje** een grote draak in elkaar te knutselen.
A few days before the summer holidays Maartje decides to build herself a large dragon.

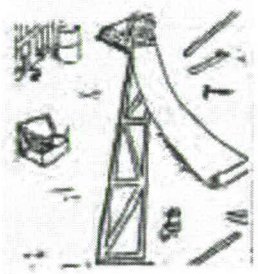
[5] The initial motivation for including such a second phase was to neutralize the time differences between participants.

2 Niet storen



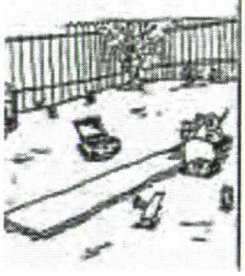
2. Vol goede moed begint **ze** eraan en **Ø** wil door niemand gestoord worden.
In good spirits she starts on it and Ø does not want to be disturbed by anyone.

3 Urenlang knutselen



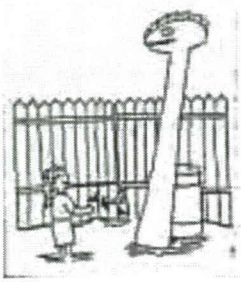
3. **Ze** haalt **haar** gereedschap boven en **Ø** knutselt ijverig voort.
She gets the tools from upstairs and Ø potters on diligently.

4 Nog schilderen



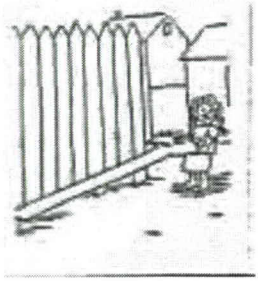
4. Na urenlang zwoegen, hoeft **ze** **haar** kunstwerk enkel nog te schilderen.
After toiling for hours, all she has left to do is paint her work of art.

5 Klaar is kees



5. Eindelijk is **haar** werk af.
Finally, her work is done.

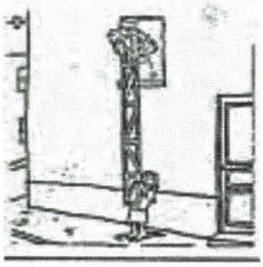
6 Eindelijk vakantie



6. Na enkele dagen is de vakantie begonnen en **Maartje** neemt haar draak overal mee.
After a few days the holidays begin and Maartje takes the dragon with her everywhere.

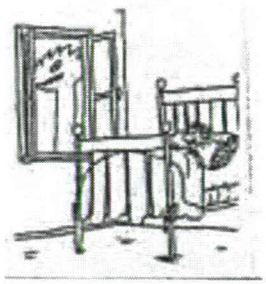
[episode shift]

7 Laten schrikken



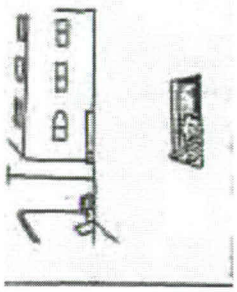
7. **Ze** heeft er niet beter op gevonden om de buren te laten schrikken.
She has not found anything better to do than scaring the neighbours.

8 ???



8. sMorgens vroeg laat **ze** de draak verschijnen voor het raam van de buurman.
Early in the morning she makes the dragon appear in front of the neighbour's window.

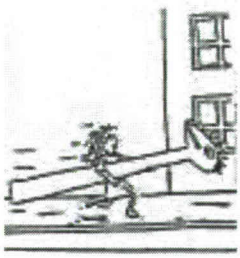
9 Niemand



9. Die lag nog lekker te soezen en Ø schrok zich natuurlijk te pletter.
He was still happily snoozing, so naturally Ø is scared out of his wits.

[viewpoint shift]

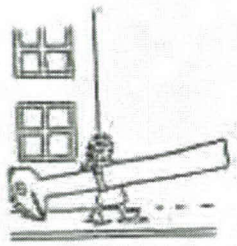
10 Wegwezen



10. **Maartje** loopt razendsnel weg met de draak onder de arm.
Maartje walks away quickly with the dragon under one arm.

[viewpoint shift]

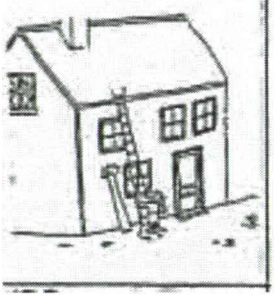
11 Enkele dagen later



11. Enkele dagen later loopt **Maartje** alweer met de draak over straat.
A few days later Maartje is walking in the street with her dragon again.

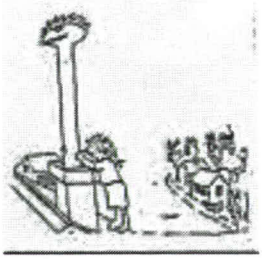
[episode shift]

12 Een nieuwe stunt



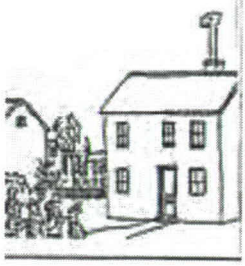
12. **Ze** beslist nog maar eens een stunt uit te halen.
She decides to pull another prank.

13 Schoorsteen



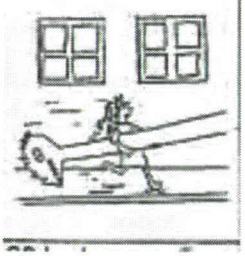
13. Deze keer stopt **ze** de draak in de schoorsteen van een buur.
This time she shoves the dragon down a neighbour's chimney.

14 Veel bekijks



14. Voorbijgangers blijven staan om het kunstwerk te bewonderen.
Passers-by stop to admire the work of art.

15 Snel weer weg



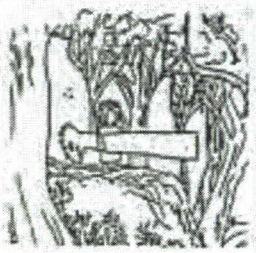
15. Zodra de mensen uit het zicht verdwenen zijn, haalt **Maartje** de draak uit de schoorsteen en **Ø** holt snel weer weg!
As soon as they have disappeared from view, Maartje takes the dragon out of the chimney and Ø quickly runs off again!

16 Weer op pad

16. De volgende dag gaat **Maartje** op zoek naar een nieuw avontuur.
The next day Maartje goes in search of a new adventure.

[episode shift]

17 De weg kwijt

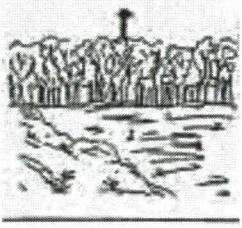


17. **Ze** trekt het bos in maar **Ø** loopt verloren.
She goes into the woods but Ø gets lost.

18 Gezien worden

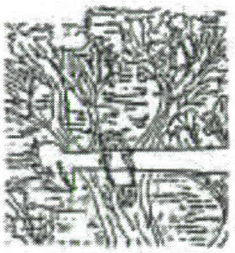
18. **Ze** beslist een boom in te klimmen opdat iemand **haar** zou zien.
She decides to climb a tree so someone will be able to see her.

19 Van veraf



19. Vanop een grote afstand kan je de draak zien die boven de bomen uitsteekt.
From far away you can see the dragon sticking out above the treetops.

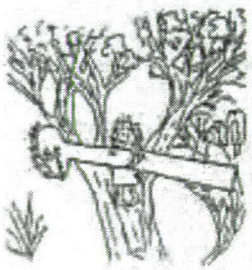
20 In slaap gevallen



20. **Maartje** is zodanig moe dat **ze** boven in de boom in slaap valt.
Maartje is so tired that she falls asleep up in the tree.

[viewpoint shift]

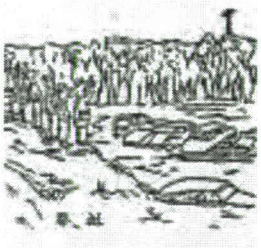
21 Volgende ochtend



21. De volgende ochtend wordt **ze** wakker en **Ø** merkt dat **ze** nog steeds in de boom zit.
The next morning she wakes up and Ø notices she is still in the tree.

[episode shift]

22 Verderop

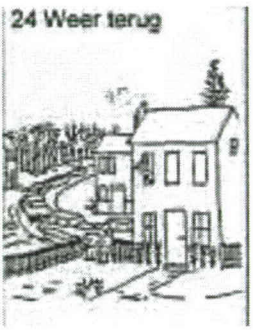


22. Een eind verderop staan mensen de draak te bezichtigen.
Further on people stand looking at the dragon.

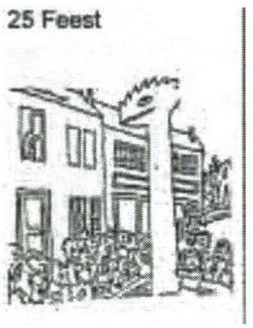
23 Gevonden

23. Ze besluiten om van dichterbij te gaan kijken en Ø vinden **Maartje**.
They decide to take a closer look and Ø find Maartje.

[viewpoint shift]



24. **Maartje** keert samen met haar bewonderaars terug naar huis.
Maartje returns home together with her admirers.



25. **Ze** wordt feestelijk onthaald en iedereen juicht **Maartje** en de draak toe!
She gets a warm welcome and everyone cheers on Maartje and the dragon!

References to the protagonist in this narrative display a number of factors discussed earlier, in chapters 2 and 3, and to be analysed in chapters 5 and 6. First, observe that in most sentences the protagonist functions as grammatical subject. In sentences (23) and (25) the protagonist functions as main clause object (rather than subject), and is referred to by a proper noun. The influence of such clause-level factors is addressed in chapter 5 (section 5.3) and chapter 6 (section 6.6).

The episode boundaries in (6), (11), and (16) are all accompanied by repetition of the proper noun. The relation between episode boundaries and the use of repeated proper nouns is analyzed in chapter 5, section 5.5, and in chapter 6, section 6.6. The only episode transition in which pronominal reference to the protagonist is continued is sentence (21). This is possibly caused by the tendency to avoid the repetition of proper nouns in consecutive sentences (cf. Gordon et al. 1993). However, in chapter 5, section 5.5.2 it is demonstrated that the tendency to repeat proper nouns after episode boundaries is not generally affected by the form of previous coreference. A more plausible explanation therefore might be that the episode boundary in picture (21) is less strong, involving only the parameter time (rather than time and location both). The influence of the various parameters making up the continuum of conceptual connectivity in the pictures is addressed in section 5.5.4. A further explanation for the use of a pronoun in spite of the episode shift in (21) is that in the description of the protagonist *waking up*, the sentence is construed from the perspective of the protagonist, representing the protagonist as

conceptualizer[6]. Other instances in which the status of the protagonist as conceptualizer (reflecting the character perspective) is accompanied by the use of pronouns are sentences (7), (12) and (18). The relation between character perspective and the use of pronouns is analyzed in chapter 5, section 5.6.2.

Another relevant factor is the appearance of other, intervening character references, and coincidentally, increased textual distance between references to the protagonist: The repeated proper nouns in sentences (10), (15), (20) and (23) coincide with intervening referents (except (20)) as well as referential distance. The factors referential distance and intervening referents will be analyzed as part of the factor viewpoint in chapter 5 (section 5.6.1), and will be assessed independently in the regression analysis in chapter 6, section 6.6.

Lastly, note that the use of null subjects is restricted to the second conjunct of coordinated main clauses. As in English, the use of null subjects is grammatically highly restricted in Dutch, and occurs almost exclusively in coordinated sentences.

This example story presents a first indication that the picture series can be used to elicit coherent, 'natural' narrative production. Further, the story seems to display the relevant referential phenomena investigated here. A systematic analysis of the elicited corpus of similar stories is likely to shed light on the import of the factors proposed in chapter 3, and thereby, on the validity of the extended reference point model proposed in chapter 2. The next two chapters present analyses of the corpus in view of the hypotheses put forth in chapter 3.

[6] Note however that, in the description of *falling asleep*, in the previous sentence, the factor character perspective does not override the factors distance and intervening referents.

Chapter 5
The distribution of proper nouns and pronouns
A frequency analysis of the collected corpus

5.1 Introduction

This chapter presents an analysis of the distribution of referential expressions in the elicited corpus of narrative Dutch texts. It aims to address the question which factors are relevant for the distribution of proper nouns versus pronouns in references to topical narrative characters (i.e., the first part of research question 3 in chapter 1). To this end, it investigates a number of hypotheses put forth in chapter 3.

The set-up of the chapter is as follows: Section 5.2 gives a general characterization of the corpus. Section 5.3 analyses the relation between syntactic function and the use of proper nouns versus pronouns. Section 5.4 addresses another clause-level factor, namely linear position. Section 5.5 focuses on the implemented episode boundaries, and some other issues related to episode structure. Section 5.6 analyses visual viewpoint shifts as implemented in the pictures; in addition, it analyses the influence of character perspective as a text characteristic. Section 5.7, lastly, addresses the implemented variable page breaks. In section 5.8, the results of the analyses will be discussed relative to the model put forth in chapter 2.

The factors intervening referents and referential distance are not included in this chapter[1]. They will be addressed in the next chapter.

5.2 Characterization of the corpus

5.2.1 General characteristics and selections

305 participants were involved in the production task. Of the handwritten texts, 23 were excluded from the data, either because they were illegible or because the participant had not finished the task. This resulted in a corpus of 282 texts. Altogether, the narrators produced 8815 nominal expressions referring to the protagonist (including zero anaphora, and possessives). Table 1 gives a general impression of the number of participants and their (mean) number of references to the protagonist in the four different conditions.

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[1] The factors intervening referents and referential distance are, however, involved in the visual viewpoint factor, cf. discussion section and chapter 6.

Table 1
Number of participants, and (mean) protagonist references, in four conditions.

Condition	Number participants	Prot. references	Mean no. of prot. ref. per story	Mean no. of prot. ref. per picture
1 (2 pictures p page)	86	2571	30	1.2
2 (2 pictures p page)	68	2063	30	1.2
3 (5 pictures p page[2])	52	1770	34	1.4
4 (6 pictures p page)	76	2411	32	1.3
Total	282	8815	31	1.3

Table 2 shows the number of references per condition, for four different selections that will be used for the analyses.

Table 2
Selections of references to the protagonist.

Condition	Selection 1 All	Selection 2 Independent references	Selection 3 First, excl. picture 1	Selection 4 First, independent excl p.1
1	2571	2191	1610	1529
2	2063	1732	1270	1188
3	1770	1498	988	940
4	2411	2048	1428	1348
Total	8815	7469	5296	5005

Selection 1: All protagonist references
Selection 2: Independent protagonist references (i.e. excluding possessives)
Selection 3: First references to the protagonist within a single picture, excluding first picture

[2] In this condition, page breaks coincide with episodes (cf. appendix to chapter 4).

Selection 4: Independent references to protagonist, first within picture, excluding first picture.

Corpus selections for the analysis of implemented shifts

This subsection addresses the distribution of references over the implemented discourse-structural shifts in the corpus. It describes the selections of data to be analysed in sections 5.5 through 5.7, and also explains the differences in numbers of observations in the different analyses.

For the analysis of the implemented variables, I included only the *first* expression referring to the protagonist in the description of each picture, since the aim is to establish the use of proper nouns *immediately* following discourse shifts, i.e., the proportion of proper nouns in *first* references relating to pictures displaying such a shift. In other analyses, for instance those involving linear distance, in chapter 6, I did include consecutive references within pictures. The first reference in picture 1 was also left out of the analyses, as participants by default introduce the protagonist in the narrative by using a proper noun (although it is not impossible to start a narrative with a pronoun, as some literary writers do). The selection enables us to compare the effect of different types of shifts.

In some cases, more than one type of shift applies; for example, a page break may coincide with either an episode break or a visual viewpoint shift. Also, a strong effect of one variable may obliterate the effect of other variables. In order to neutralize such influences, I compared the effect of each of the implemented shifts to situations in which the discourse continues without any implemented shifts. The analysis of the implemented factors, then, compares the implemented variables to pictures in which *none* of the other independent variables apply, in other words, to situations in which the discourse continues without an episode, viewpoint or perceptual attention (page) break[3].

Table 3 gives an overview of the distribution of shifts. The cases in which both episode shifts and page breaks occur, as well as the cases in which both viewpoint shifts and pagebreaks occur, are excluded from the analysis of individual shifts, so as to compare the shifts specifically to situations in which the discourse continues.

[3] This also explains the different numbers of observations in sections 5.5.1, 5.6.1, and 5.7.

Table 3
Number of protagonist references in different discourse-structural contexts, all conditions (Selection: first, excl p.1, n = 5296)

Discourse structure	Number of references
Continuation (no shift)	2006
Episode shift only	556
Viewpoint shift only	854
Page break shift only	1090
Episode and page break shift	471
Viewpoint and page break shift	319

Note that, since in condition 3 episode shifts and page breaks coincide, the category of episode shifts above excludes condition 3 entirely. The episode shifts in condition 3 will be analysed separately.

Condition 3

For a number of analyses, condition 3 was annotated separately in more detail (word by word, and coded for more variables), than the other conditions[4]. The choice for condition 3 is motivated by the view that this represents the most 'natural' condition.

Condition 3, in which episode breaks consistently coincide with page breaks, most resembles the natural flow of attention in discourse, in which attention shifts and discourse structure coincide. The naturalness of attention shifts (such as page breaks) at episode junctures is attested in Schilperoord (1996), in which it was demonstrated that pause length (pauses reflecting cognitive effort in planning conceptual content for expression) significantly increases at junctures in the hierarchical discourse structure. So whatever the differences between the four conditions turn out to be, it can be assumed that condition 3 represents the closest approximation of spontaneous discourse production.

Condition 3 is used for a comparison between the protagonist and other characters. It is also used for the analysis of clause-internal factors linear position and syntactic function, for the analysis of character perspective, and for the analysis of episode shifts relative to distance factors and discourse markers.

[4] This selection will also be used in chapter 6

5.2.2 Types of expression used in reference to the protagonist

This section describes the types of expression used to refer to the protagonist. It demonstrates that references to the protagonist display established linguistic characteristics of topicality.

Table 4 reports the types of expression used in reference to the protagonist (in all four conditions).

Table 4
NP types used for references to the protagonist. Selection: all conditions, only independent references, (n=7469)

Referential Form	Frequencies	Percent	Examples
Ø (zero form)	1090	14.6	
Pronoun	3848	51.5	ze (*she*)
Proper Noun	2416	32.3	Maartje
Definite NP	34	0.5	het meisje (*the girl*)
Modified definite NP	42	0.6	het arme meisje (*the poor girl*)
Indefinite NP	3	0	een meisje (*a girl*)
Modified indefinite NP	9	0.1	een klein meisje (*a little girl*)
Demonstrative pronoun	9	0.1	die (*that*)
Demonstrative NP	3	0	dat meisje (*that girl*)
Combined full reference to protagonist and dragon	15	0.2	Maartje en de draak (*Maartje and the dragon*)

The data confirm the expectation that topic characters in narratives are predominantly coded by (repeated) proper nouns and pronouns, rather than alternative referential expression types such as demonstrative expressions and definite descriptions.

The participants mostly used proper nouns, pronouns, and – to a lesser extent – zero forms in reference to the story protagonist. As for full nominal reference, only in 1.5 percent of cases did subjects use alternative descriptions such as (modified) (in)definite NPs (e.g. "the poor girl") rather than proper nouns. I therefore included them in the category proper noun. As for attenuated reference, demonstrative pronouns were used only in 0.1 percent of cases. Also, zero forms are used almost exclusively in the second conjunct of coordinated sentences; in the distribution of *first* references per picture – which is most relevant for our assessment of discourse-structural factors - the proportion of zero anaphora is much smaller (2.5 rather than 14.6 %), as shown in table 5. Since proper nouns and pronouns are the predominant categories, I subsumed the categories zero, demonstrative pronoun and pronoun under the label *pronoun*.

Table 5
NP types used for references to the protagonist. Selection: *first* references per picture, excluding first picture, only independent references (n = 5005, percentages in brackets)

Referential Form	
Proper Noun	2163 (43.2)
Pronoun	2718 (44.3)
Ø (zero form)	124 (2.5)

In analysing the data, then, I created two main expression categories for all the protagonist references in the corpus: the category pronoun (i.e. pronouns and zero) and the category proper noun (which includes all full nominal expressions, i.e., the rest).

Proper nouns and pronouns in four conditions
Having established the general predominance of proper nouns and pronouns in references to the protagonist, the following gives an impression of the distribution of this alternation over the four conditions. This is shown in table 6.

Table 6
Distribution of proper nouns and pronouns in relation to four conditions. Selection: All conditions, all cases (n = 8815, percentages in brackets).

Condition	Referential form	
	Proper nouns	Pronouns
1 (2 pictures per page)	707 (27.5)	1864 (72.5)
2 (2 pictures per page)	600 (29.1)	1463 (70.9)
3 (5 pictures per page)	523 (29.5)	1247 (70.5)
4 (6 pictures per page)	692 (28.7)	1719 (71.3)

A first observation is that the four conditions do not display different distributions of proper nouns versus pronouns (χ^2 (3) = 2.55, p = .47)[5].

Characteristics of topicality in the corpus
Since the corpus study is concerned with the influence of discourse structure on the coding of *topic* referents, it is important that the 'comic' protagonist function as discourse topic at the text level of the collected corpus. The remainder of this section addresses a number of expectations concerning the coding of topic (rather than secondary) characters.

Table 7 gives the distribution of referential form relative to character type.

Table 7
Referential form in relation to character type (condition 3, only independent references, n = 2567, percentages in brackets)

Character type	Full nominal[6]	Pronoun
Protagonist	533 (37.9)	874 (62.1)
Other characters	940 (81.0)	220 (19.0)

[5] Due to the nature of the data (observations are nested within pictures and participants), the χ^2 scores should be interpreted with some caution. The nesting of observations might in some cases lead to an overestimated χ^2 score. However, the scores reported here are so high that this should not pose a problem. Moreover, the nested nature of the data will explicitly be taken into account in the next chapter.
[6] As pointed out above, for analyses of reference to the protagonist, I use the term proper noun rather than full nominal. In table 7 I use the more general term full nominal rather than proper noun, since the analysis also involves other characters.

There is a significant relation between referential form and character type (χ^2 (1) = 484.14, p<.001). The protagonist is predominantly pronominalised, which is not the case for other characters.

Table 8 demonstrates the relation between character type and syntactic function.

Table 8
Syntactic function in relation to character type. Selection: condition 3, only independent references (n = 2567, percentages in brackets)

Character Type	Subject	Other
Protagonist	1276 (90.7)	131 (9.3)
Other characters	548 (47.2)	612 (52.8)

There is a significant relation between character type and syntactic function (χ^2 (1) = 583.59, p<.001). The story protagonist functions predominantly as grammatical subject, which is not the case for other characters.

It can be concluded that the protagonist is coded differently from the other characters in terms of syntactic function and referential form: the coding of the comic's protagonist displays independently established characteristics of topicality. The findings reported above are in line with observations and claims by Karmiloff-Smith 1981, Kuno 1987, Chafe 1994 and others. These results establish the linguistic topic status of the story protagonist in the collected corpus. This in turn lends further support to the validity of the elicited corpus as a tool for investigating the properties of reference maintenance for narrative topics.

The remainder of the study focuses on references to the story protagonist. Therefore, phrases such as *proportion of proper nouns*, *proportion of pronouns*, etc, are meant to indicate expressions referring *only to the story protagonist*.

5.3 Syntactic function

This section concerns the question whether the differences in salience accorded to the different clausal complement positions are reflected in the use of proper nouns versus pronouns. The hypothesis put forth in chapter 3 is repeated below:

Hypothesis syntactic function
In reference to main / topic characters, the proportion of pronouns in subject position is higher than the proportion of pronouns in direct object position. The proportion of pronouns in direct object

position is in turn higher than the proportion of pronouns in indirect object position. The proportion of pronouns in indirect object position, lastly, is higher than that in oblique complement position.

The data are presented in table 9.

Table 9
Syntactic function and proper noun / pronoun distribution. Selection: all conditions, excluding picture 1 (n = 7469, percentages in brackets)

	Referential form	
Complement chain	Proper nouns	Pronouns
Subject	2206 (32.4)	4607 (67.6)
Direct object	214 (41.9)	297 (58.1)
Indirect object	34 (54.0)	29 (46.0)
Oblique / Modifier	68 (82.9)	14 (17.1)

There is a significant relation between referential form and the syntactic functions subject, direct object, indirect object and oblique (χ^2 (3) = 121.00, p <.001). The data furthermore suggest that the preference for the use of pronouns increases as the referent is positioned higher on the syntactic complement chain.

5.4 Linear position

This section investigates whether the referent's linear position within the clause affects the proper noun / pronoun distribution. The hypothesis to be tested is as follows:

Hypothesis linear position
The proportion of pronouns in clause-initial character references is higher than the proportion of pronouns which do not occupy clause-initial constituent position.

Table 10 demonstrates the data for linear position and referential form.

Table 10
Proper noun / pronoun distribution relative to linear position within the embedding clause. Selection: condition 3, first reference in picture, excluding picture 1, (n=983 (5 missing), percentages in brackets).

	Referential form	
Linear position referent	Proper nouns	Pronouns
First constituent	138 (37.5)	230 (62.5)
Not first constituent	326 (53.0)	289 (47.0)
Total	464 (47.2)	519 (52.8)

There is a significant relation between linear order and the proper noun / pronoun distribution (χ^2 (1) = 22.22, $p < .001$). References occupying clause-initial position are pronominalized more often than references that are preceded by other expressions within the clause.

5.5 Episode structure

Section 5.5.1 is concerned with the episode shifts implemented in the visual stimuli; section 5.5.2 relates the repetition of proper nouns at episode boundaries to a number of distance measures; section 5.5.3 analyses the relation between repeated proper nouns and discourse markers at episode boundaries; in section 5.5.4 I present an exploration of the more fine-grained approach to discourse structure in terms of situation model parameters.

5.5.1 Episode shifts

The hypothesis concerning episode shifts is as follows:

> **Hypothesis episode shift**
> The proportion of proper nouns in the description of pictures immediately following an episode boundary is greater than the proportion of proper nouns in pictures in which no (episode, viewpoint, or page break) shift occurs.

The data are shown in table 11.

Table 11
Proper noun / pronoun distribution and episode boundaries. Selection: all conditions, only first references per picture, excluding viewpoint shift pictures, page break pictures and picture 1 (n = 2562, percentages in brackets).

	Referential form	
	Proper nouns	Pronouns
Episode boundary	174 (31.3)	382 (68.7)
No shift	477 (23.8)	1529 (76.2)

There is a significant relation between episode boundaries and referential form, (χ^2 (1) = 12.98, p<.001). Although narrators use pronouns in the majority of cases, even after episode boundaries, they use proper nouns more often after episode boundaries than when there is no (episode, viewpoint, or page break) shift.

The analysis given above involves situations in which only a single implemented shift occurs, i.e. excluding episode shifts coinciding with page breaks. The analysis in table 11 therefore entirely excludes condition 3, in which page breaks and episode boundaries co-occur. As argued above, condition 3 is the most natural condition, the one that is closest to spontaneous discourse production. The above analysis therefore probably underestimates the repetition of proper nouns at episode boundaries. Table 12 reports the distribution of referential form relative to the episode boundaries.

Table 12
Proper nouns / pronoun distribution and episode boundaries. Selection: condition 3, only first references per picture, *excluding viewpoint shift pictures*, and picture 1 (n= 769, percentages in brackets).

	Referential form	
	Proper nouns	Pronouns
Episode boundary	91 (45.7)	108 (54.3)
No shift	149 (26.1)	421 (73.9)

There is a significant relation between episode boundaries (in condition 3) and referential form, (χ^2 (1) = 52.46, p<.001). Narrators repeat proper nouns more often after episode boundaries than in cases in which the discourse continues.

5.5.2 Episode and distance factors

In chapter 3 I put forth the expectation that the tendency to use repeated proper nouns after episode shifts remains independent from (i.e. overrides) the basic expectations based on the form of previous corresponding reference. The hypothesis is repeated below:

> **Hypothesis form of preceding coreference and episode shifts**
> New episodes lead to the repetition of proper nouns, *irrespective* of the form of corresponding reference (proper noun or pronoun) immediately preceding the episode transition.

I analysed first references in 'episode shift' pictures (6, 11, 16, 21), in condition 3 of the collected corpus, i.e. the condition in which episode and page break shifts coincide. Table 13 shows the relation between the type of expression right before an episode shift and the type of expression right after the shift.

Table 13
Distribution of proper nouns and pronouns before and after episode boundaries, Selection: Condition 3, first references in pictures 6, 11, 16, and 21, excluding cases without reference in preceding picture. (n= 189, percentages in brackets).

	After episode boundary	
Before episode boundary	Proper nouns	Pronouns
Proper noun	51 (54.8)	42 (45.2)
Pronoun	55 (57.3)	41 (42.7)

There is no significant relation between the expression types used right *before* the episode transition and the tendency to repeat proper nouns right *after* the onset of the new episode. (χ^2 (1) = 0.12, p=.73). This result supports the idea that episode shifts coincide with an increased proportion of proper nouns (cf. the results in section 5.5.1 above), *irrespective* of the type of expression used right before the shift.

In chapter 3 I also put forth the expectation that the tendency to repeat proper nouns after episode boundaries is not affected by the distance (in terms of clauses) to the previous coreferential expression (before the episode transition). The hypothesis is as follows:

Hypothesis referential distance and episode shifts
New episodes lead to the repetition of proper nouns, *irrespective* of the presence or absence of corresponding reference in the clause immediately preceding the episode transition.

The data are given in table 14.

Table 14
Expression type after episode shift and referential distance (in terms of the clauses between references before and after the episode shift) (condition 3, n = 201, percentages in brackets)

	Referential form	
Referential distance	Proper noun	Pronoun
Successive clauses	91 (56.5)	70 (43.5)
Non-successive clauses	23 (57.5)	17 (42.5)

There is no significant relation between referential distance (namely, whether or not the preceding reference is contained within the immediately preceding clause), and the expression type used after the episode shift. (χ^2 (1) = 0.01, p = .91). The referential distance between the last reference *before* the episode shift and the first reference *after* the episode shift does not affect the proportion of repeated proper nouns after an episode shift. Hence, the use of proper nouns after episode shifts is not affected by the short distance to the antecedent.

The two findings reported above confirm the expectation that repeated proper nouns after episode boundaries are a rather robust tendency.

5.5.3 Episode and discourse markers

In chapter 3 I put forth the expectation that repeated proper nouns may serve a discourse-structuring function in addition to their basic identifying function. If the presence of (e.g. temporal, locative) discourse markers decreases the tendency to repeat proper nouns after episode shifts, that provides indirect support for the discourse-marking function.

Hypothesis discourse markers and episode transitions
The proportion of proper nouns in episode transitions *without* discourse marker is higher than the proportion of proper nouns in episode transitions *with* discourse marker.

I analysed first references in 'episode shift' pictures (6, 11, 16, and 21), in condition 3 of the collected corpus, i.e. the condition in which episode and page break shifts coincide. (i.e. the same cases as in 5.5.2 above). Table 15 shows the relation between expression type after episode transitions and the presence or absence of a discourse marker.

Table 15
Distribution of proper nouns and pronouns after episode boundaries, in relation to the presence of discourse markers (condition 3, n = 201, percentages in brackets).

	Referential form	
	Proper nouns	Pronouns
Discourse marker	99 (56.3)	77 (43.8)
No discourse marker	15 (60.0)	10 (40.0)

There is no significant relation between discourse marking and the choice between pronominal and full (proper noun) expressions after episode transitions (χ^2 (1) = 0.13, p = .72). Thus, the analysis does not support the suggested complementary distribution between nominal expressions and other discourse structure markers. After episode shifts, the proportion of nominal expressions is not related to the presence or absence of discourse markers.

5.5.4 Situation model factors

This section presents a posthoc analysis of episode structure: apart from the more traditional characterization of narrative episodes in terms of time and location, I will explore a more fine-grained approach to conceptual connectivity in terms of the (dis)continuity of situation model parameters (*time, location, cause, motivation and character*, cf. Zwaan & Radvansky 1998, and chapter 2).

The more and the stronger the changes in event parameters between consecutive stretches of discourse, the stronger the break in conceptual connectivity between such segments. It is explored whether the number of changed event parameters from one clause/segment to the next is also related to the tendency to use a proper noun rather than a pronoun. The general hypothesis for the situation model parameters is as follows:

Hypothesis situation model factors
The proportion of proper nouns increases along with the number (and strength[7]) of the changed situation model parameters in the embedding clause, with respect to the preceding clause or segment.

This posthoc analysis relates the proportion of repeated proper nouns in the 25 different pictures to three out of the five situation model parameters, i.e. time, location, and character, as displayed in the visual story. The reason for including only the parameters *time*, *location* and *character*, is that these can be clearly discerned from the pictures. The dimensions *motivation/goal* and *causation*, although probably relevant as well, are mostly part of the participants' own contribution to the story, and cannot be linked exclusively to particular pictures.

One further adjustment is made: the parameter *character* is divided into protagonist and secondary characters. These character parameters, then, reflect temporary absence of the protagonist, and intervening reference, respectively. The current analysis therefore covers the main component parts of the factor episode shift, and two components accompanying viewpoint shifts, namely, temporary absence of the protagonist, and intervening reference.

It is expected that the proportion of proper nouns used at the beginning of a new picture is related to the amount of event parameters changing from one picture to the next. This leads to the following hypothesis:

Hypothesis situation model factors in pictures
The proportion of proper nouns is consistent with the degree of connectivity between the target picture (picture corresponding to the referential expression) and the previous picture, in terms of the parameters character (protagonist and other characters), time and location.

The assignment of conceptual connectivity between pictures in which the protagonist occurs is based on the following questions, in which a positive answer indicates a discontinuity:

- TIME/LOCATION: For the present picture, is there a substantial shift in time / location with respect to the previous picture?
- PROTAGONIST: Is the protagonist absent, either in this picture, or in the picture immediately preceding the current picture?
- OTHER CHARACTERS: For the present picture, is another character, or are other characters displayed in between this picture and the previous one containing the protagonist?

For a positive answer the corresponding picture is marked in the relevant column in table 16. This table marks per picture and per situational parameter whether there is

[7] Strength of parameter shifts is not measured here, only the number of changed parameters, hence the parentheses.

a discontinuity with respect to the previous picture. As explained above, there are two 'character' columns, since discontinuities in this parameter are of two kinds: (i) absence of the main character; and (ii) presence of other, intervening characters. The total number of changed parameters for each picture can be interpreted as a measure for the degree of conceptual connectivity between the relevant picture and the previous one.

Table 16
Conceptual connectivity in the visual story, according to the situation model parameters character, time, location.

Picture	Prot. absent	Other character present	Time shift	Place shift	Total no. shifts	Proper noun %
2					0	11.1
3					0	28.0
4					0	13.2
5					0	38.6
6			+	+	2	57.3
7				+	1	28.9
8	+	+			2	10.1
9	+	+		+	3	74.3
10		+		+	2	80.6
11			+	+	2	56.0
12				+	1	11.0
13					0	14.4
14	+	+			2	30.4
15	+	+		+	3	81.6
16				+	1	25.7
17					0	28.6
18					0	21.7
19	+				1	15.9
20	+			+	2	87.0
21			+		1	21.6
22	+	+			2	13.6
23	+	+			2	89.7
24	+			+	2	47.3
25	+	+		+	3	45.2

A pearson correlation test reveals that there is a significant correlation between the number of changed situation model parameters and the percentage of proper nouns ($r = .63, p < .01$ (2-tailed)).

The above categorization yields four categories of conceptual connectivity displayed between pictures, ranging from no shifts in situation model parameters

(marked 0 in the 'total' column, e.g. picture 2), to three shifts (marked 3 in the 'total' column, e.g. picture 9). Table 17 shows the relation between referential form and picture connectivity, in which conceptual connectivity is categorized according to the number of changed situation model parameters.

Table 17
Proper noun / pronoun distribution relative to picture connectivity (number of changed situation model parameters). Selection: first reference in picture, excluding picture 1. (n = 5296, percentages in brackets).

	Referential form	
Number of changed parameters	Proper nouns	Pronouns
0 (pictures 2,3,4,5, 13, 17,18)	386 (21.6)	1399 (78.4)
1 (pictures 7,12,16, 19, 21)	248 (21.5)	906 (78.5)
2 (pictures 6,8,10,11,14,20,22, 23,24)	1134 (64.5)	624 (35.5)
3 (pictures 9,15,25)	392 (65.4)	207 (34.6)

The categorization in four categories of conceptual connectivity is significantly related to the proper noun / pronoun distribution (χ^2 (3) = 1009,580, p <.001). Further, the data suggest a general opposition between 'strong connectivity' pictures and 'weak connectivity' pictures.

Another hypothesis relates to the degree of connectivity as displayed in the four different episode shifts. Strong episode boundaries (pictures 6 and 11) comprise two parameter shifts (time and location), weak episode boundaries (pictures 16 and 21) comprise only one parameter shift (time or location). The following hypothesis is based on the difference between pictures 6 and 11 on the one hand, and pictures 16 and 21 on the other. It is expected that 'stronger' episode shifts (involving more than a single situation model parameter) have a stronger tendency to trigger repeated proper nouns than 'weaker' episode shifts.

> **Hypothesis**. The proportion of proper nouns in the verbalization of pictures 6 and 11 is higher than the proportion of proper nouns in the verbalization of pictures 16 and 21.

Table 18 reports the distribution of proper nouns versus pronouns relative to the strength of episode boundaries[8].

[8] Note that the number of observations of episode boundaries does not coincide with those reported in table 11. This is due to the fact that table 11 excludes all episode shifts which coincide with page break

Table 18
Proper nouns / pronouns relative to strength of episode boundaries. Selection: all conditions, only first reference in picture. (n= 1027, percentages in brackets)

	Referential form	
Episode boundary	Proper nouns	Pronouns
Strong (picture 6, 11)	272 (56.5)	209 (43.5)
Weak (picture 16,21)	129 (23.6)	417 (76.4)

There is a significant relation between the strength of the episode shift and the proper noun / pronoun distribution (χ^2 (1) = 116.46, p<.001). Narrators use more repeated proper nouns after strong episode boundaries than after weak episode boundaries.

5.6 Viewpoint shifts

This section addresses two related factors, namely the influence of the implemented viewpoint shifts, and the influence of character perspective (i.e. a text characteristic annotated afterwards).

5.6.1 Visual viewpoint shifts

The viewpoint shifts as implemented in the pictures depict a single situation from a different viewpoint, but are also characterized by the absence of the main character and the appearance of other characters, within the same episode. The target viewpoint pictures are the ones in which the protagonist reappears.

> **Hypothesis viewpoint shift**
> The proportion of proper nouns in the description of pictures immediately following a viewpoint shift is greater than the proportion of proper nouns when no shift is involved.

The data are presented in table 19.

shifts, the latter excluding not only episode shifts in condition 3, but also a number of episode shifts coinciding with page break in conditions 1 and 2.

Table 19
Proper noun / pronoun distribution and viewpoint shifts. Selection: all conditions, only first references per picture, excluding pagebreak pictures, episode shift pictures and picture 1 (n = 2860, percentages in brackets).

	Referential form	
	Proper nouns	Pronouns
Viewpoint shift	721 (84.4)	133 (15.6)
No shift	477 (23.8)	1529 (76.2)

There is a significant relation between viewpoint shift and referential choice (χ^2 (1) = 905.09, p<.001). After viewpoint shifts narrators use proper nouns (rather than pronouns) relatively more often than when there is no shift.

The data given in tables 11, 12, and 19 suggest that viewpoint shifts are more influential in triggering the use of repeated proper nouns than episode boundaries. This is not really surprising: The viewpoint shifts, as implemented in the visual stimuli used here, invariably involve the temporary absence of the protagonist, the possible mention of other characters, and subsequent re-introduction of the main character. Episode transitions, on the other hand, may vary in terms of the strength of the break in conceptual connectivity. In addition, the episode boundaries do not coincide with absence of the main character. The data presented in this chapter certainly *suggest* that viewpoint shifts are more influential than episode shifts in triggering repeated proper nouns. Whether this is indeed the case will be tested in the next chapter.

5.6.2 Character perspective

The analysis of character perspective presented in this section is an elaboration of the analysis of the visual viewpoint factor in the previous section. Character perspective also involves viewpoint, but in a different way: it is not implemented in the pictures, and it does not involve the factors referential distance and intervening reference. Rather, it concerns the subjective viewpoint of the embedded protagonist (as described in Sanders 1994), and its influence on the form of protagonist reference.
The hypotheses concerning the different degrees of character perspective are repeated below:

> **Hypothesis perspective**
> The proportion of pronouns in free indirect discourse is higher than the proportion of pronouns in implicit perspective. And in turn the

proportion of pronouns in implicit perspective is higher than that in direct narrative.

Hypothesis secondary character perspective
The proportion of proper nouns in references to the protagonist in cases in which the embedding clause reflects a secondary character perspective (i.e. a character other than the protagonist) is higher than in cases in which the clause represents either direct narrative or protagonist perspective.

The perspective variable was not implemented in the pictures but was annotated afterwards as a text characteristic. I annotated the protagonist references for the perspective category of the embedding clause. As explained in chapter 3, the analysis includes only the categories direct narrative, implicit perspective, and free indirect discourse. The annotation also distinguished an additional category of implicit perspective, namely cases reflecting the 'outside' perspective of secondary characters. I analysed the proportion of proper nouns and pronouns in *subject* references to the protagonist, compared to the degree of character perspective reflected by the clauses in which they occur.

Table 20 gives the proportion of proper nouns and pronouns relative to perspective category: the perspective of the narrator (through direct narrative); the perspective of the protagonist (through implicit perspective or free indirect discourse); and perspective of secondary characters (through implicit perspective). It also includes a number of cases in which it was difficult to unambiguously assign a particular perspective category.

Table 20
Perspective categories and proper noun / pronoun reference to protagonist. Selection: condition 3, first references in picture, excluding first picture, excluding 4 cases of free indirect discourse and 45 undecided cases. (n = 941, percentages in brackets)

Perspective	Referential form	
	Proper nouns	Pronouns
Direct narrative - Narrator	259 (48.5)	275 (51.5)
Implicit perspective - Protagonist	123 (36.9)	210 (63.1)
Implicit perspective - Secondary character	63 (90.0)	7 (10.0)

The category of free indirect discourse did not occur frequently enough to test the hypothesis that the proportion of pronouns increases with the *degree* of character perspective.

An analysis involving the main opposition between direct narrative and implicit perspective (i.e. excluding secondary character perspective) yields a significant relation between perspective (narrator versus protagonist) and referential form ($\chi^2(1) = 11.13$, $p<.01$). When the protagonist is presented as conceptualizer, through implicit perspective, the proportion of pronouns in reference to protagonist is higher than in direct narrative mode.

There is also a significant relation between referential form and the perspective of either narrator, protagonist, or secondary character ($\chi^2(2) = 65.82$, $p<.001$). When the protagonist is presented from the perspective of secondary characters, protagonist reference occurs through full nominals, more so than in direct (narrator) or implicit (protagonist) perspective.

Another hypothesis concerns the question whether protagonist perspective affects the tendency to repeat proper nouns after episode boundaries:

> **Hypothesis perspective and episode boundaries**
> If the onset of a new episode is a perspectivized clause (reflecting protagonist perspective), the proportion of proper nouns in reference to the protagonist is lower than if the new episode is introduced through direct narrative.

Table 21 gives the proportion of proper nouns and pronouns after episode boundaries, relative to perspective category.

Table 21
Narrator vs. character perspective at onset of *new episode*, and proper noun / pronoun reference to protagonist. Condition 3, first references in pictures 6, 11, 16, 21, only direct and implicit perspective (n = 194, percentages in brackets).

Perspective category	Referential form	
	Proper nouns	Pronouns
New episode from narrator perspective	67 (68.4)	31 (31.6)
New episode from protagonist perspective	44 (45.8)	52 (54.2)

Table 21 demonstrates a significant relation between perspective category and referential form after episode boundaries ($\chi^2(1) = 10.06$, $p < .01$). When the onset of a new episode is presented from a subjective protagonist perspective, the proportion of repeated proper nouns (in reference to protagonist) is lower than when it is presented in direct narrative.

5.7 Page breaks

The third factor implemented in the visual stimuli, page breaks, concerns disruptions in the flow of attention while viewing the pictures. This factor is not related to the content of the narrative, like the other two implemented factors, episode boundaries and viewpoint shifts. The factor perceptual attention is implemented as page breaks in the presentation of the visual stimuli. The hypothesis for the page break factor, adapted from chapter 3, is as follows:

> **Hypothesis** The proportion of proper nouns in references immediately following a pagebreak is higher than the proportion of proper nouns in pictures that do not follow any discourse structural (episode, viewpoint or pagebreak) shift.

The data for the implemented variable page break are shown in table 22.

Table 22
Proper noun / pronoun distribution and page breaks. Selection: all conditions, only first references per picture, excluding viewpoint shift pictures, episode shift pictures and picture 1. (n = 3096, percentages in brackets).

	Referential form	
	Proper nouns	Pronouns
Page break	296 (27.2)	794 (72.8)
No shift	477 (23.8)	1529 (76.2)

The occurrence of page breaks is significantly related to the use of proper nouns versus pronouns, (χ^2 (1) = 4.30, $p<.05$). After page breaks, proper nouns are used in 27.2 percent of cases, compared to 23.8 percent of cases when no shift applies, i.e. proper nouns are used slightly more often after page breaks than when the discourse continues without any implemented shift.

Summarizing, the results indicate that all implemented factors are significantly related to the proportion of proper nouns. The conceptual factors seem to be more influential than the perceptual attention factor page break.

5.8 Discussion

This section discusses the insights that might be gained about the proper noun / pronoun alternation, based on the analyses presented in the foregoing sections. It also addresses the question whether the outcome fits into the reference point model proposed in chapter 2.

Topicality

I reported a number of general characteristics of the way narrators refer to the protagonist and other characters in this corpus: As expected, the protagonist tends to be pronominalised more often than secondary characters, and it tends to function as grammatical subject, more so than secondary characters.

Reference to the protagonist tends to display an alternation pattern of proper nouns and pronouns, to the *exclusion* of other expression types such as demonstrative NPs and alternative descriptions such as definite modified NPs. This observation contrasts with expectations based on accessibility theory (Ariel 1988, 1990), in which demonstrative expressions occupy an intermediate position on the grammatical scale of referential expressions, between definite full nominals (including proper nouns) and pronouns. However, intermediate categories such as demonstratives are almost never selected. The predominance of proper nouns and pronouns confirms that these are the categories *par excellence* that narrators use in reference to (narrative) discourse topics, and that they are not on a par with other expression types, differing only in degree of salience (or accessibility).

Salience within the clause: syntactic function and linear order

The analysis of the relation between syntactic function and referential form reveals a significant relation between, on the one hand, the choice for either a proper noun or a pronoun, and the referent's function as either subject, object, indirect object or oblique complement of the embedding clause (table 9), on the other. Subject references are often pronominalised, and moreover, the proportion of proper nouns in the different syntactic functions is consistent with Keenan and Comrie's (1977) hierarchy of grammatical relations. The different degrees of salience associated with or inherent in these different types of complement largely determine the full nominal / pronoun possibilities for coreferential nominals *within* the same clause (Van Hoek 1997). The results reported here indicate that the complement hierarchy – i.e., the different degrees of salience inherent in different syntactic positions – is also related

to the proper noun / pronoun choice for *discourse* referents, i.e. when the antecedent for the expression is not contained within the same clause.

Another finding is that narrators are more likely to repeat proper nouns when the references do not occupy clause-initial position (table 10). Although this pattern is of course quite different from the linear order anaphora constraints *within* the clause (i.e. when the antecedent is contained within the same clause), it does confirm that the linear position of constituents is relevant to referential form both within and across the clause level. Again, I suggest this pattern can be explained in terms of the salience associated with different linear positions within the clause.

Episode structure

To recapitulate, narrative episodes are considered the main discourse level correlates of conceptual connectivity. Therefore, the interconnections between referents contained in discontinuous stretches of discourse (such as consecutive episodes) are expected to be weaker than those within a single coherent stretch of discourse. As a consequence, referent salience diminishes after episode breaks (even when the same referent occurs in both episodes), which may trigger the establishment of a new referential dominion and the use of a repeated proper noun.

The occurrence of episode shifts is indeed significantly related to referential form. Proper nouns occur more often after episode boundaries than in continuous stretches of discourse. Section 5.5.2 reported some interesting additional observations concerning the tendency to use proper nouns after discourse boundaries: it is not disrupted by factors such as referential distance and immediately preceding proper nouns. These latter factors can be characterized as factors affecting referent salience: normally, a repeated proper noun is not immediately followed by yet another proper noun (Gordon et al. 1993), but after episode boundaries the proportion of proper nouns is not affected by the occurrence of preceding proper nouns. As for the second factor, increased referential distance is generally seen as a factor affecting referent salience and triggering the use of explicit reference (Givón 1983). In spite of this tendency, the proportion of proper nouns after episode boundaries is not affected by the linear distance to the antecedent reference. These observations underline the strength of the narrators' tendency to repeat proper nouns after episode boundaries.

The analysis reported in section 5.5.3, which was aimed at exploring the discourse-structuring function of repeated proper nouns, produced no complementary distribution between repeated proper nouns and the use of discourse markers at the beginning of episodes. These results indicate that narrators do not use proper nouns as *alternative* to locative or temporal discourse markers. Still, narrators may use *both* full nominals and other discourse structure markers for signalling a new discourse segment. The data presented here are not conclusive in this matter. What *is* apparent is that narrators tend strongly to repeat proper nouns after episode boundaries, irrespective of preceding corresponding form, linear distance to antecedent, or presence or absence of discourse markers.

Section 5.5.4 analysed the relation between the *degree* of conceptual connectivity between consecutive pictures (in terms the situation model parameters location, time and character), and the proportion of proper nouns in the verbalization of these pictures. Generally, the strength of conceptual connectivity is reflected in the tendency to repeat proper nouns. Also, the episode shifts differ in the amount of shifts displayed: the first two episode boundaries (i.e. the ones reflecting pictures 6 and 11) involve a shift in time and location, whereas the last two (16 and 21) represent only a single shift in time or location. This difference is reflected in the higher proportion of proper nouns in the first two episodes.

Another reason that episode transitions do not invariably trigger repeated proper nouns is that they can also be construed as a continuation of the current discourse segment, because some of the situation parameters remain the same -the most important one of course being the character parameter: the continued focus on the situation of the protagonist (in all four episode shifts). That is, although there are various time/place settings, there is only one protagonist in the story, which can be expected to remain relatively salient throughout. Both the viewpoint and the focused element within the discourse (segment) remain the same. To a certain extent, therefore, an episode transition may be construed as continuous to the preceding episode.

Lastly, the corpus also contains some conceptual shifts other than the ones implemented in the visual stimuli, for example narrator comments or shifts from plot-advancing propositions to background information. These were too rare to analyse statistically, but the ones that were found seem to be similar to the examples presented in chapter 2[9]. Within the current characterization, such shifts can also be described as episode shifts of some kind. In example (1) the writer provides some background circumstances of the *situation* in which the narrative takes place:

(1) *Ze* wandelt door het bos op weg naar een volgend avontuur. Maar *Maartje* kent het bos niet en *ze* verdwaalt. (*She* is walking through the forest, looking for adventure. But *Maartje* does not know the forest and *she* gets lost).

Viewpoint

The proportion of proper nouns was highest in the case of viewpoint shifts. In chapter 3 viewpoint was characterized as the visual vantage point from which situations are depicted and can be described. Apart from the visual shift itself, the implemented shifts involve the temporary absence (or strong backgrounding, as in picture 9) of characters, the shift to other characters (except picture 19) and subsequently the *re-appearance* of the main character (which is analysed here). As such the implemented variable can be said to involve not only the discourse-structural factor of viewpoint shift, but also the factors referential distance and intervening referents.

[9] Cf. examples 27 through 31, chapter 2, section 2.5.6

One explanation for the effect is the mention of other characters. The intervening referents do not agree with the protagonist in gender and number, so pronominal reference would have been unambiguous. Their very presence, however, seems to lower the salience of the main referent: in some, but not all viewpoint shifts, the intervening referent functions as a local topic (cf. for example pictures 8-9), diminishing the salience of the global topic, the protagonist. A possible exception is the viewpoint shift in pictures 18 through 20 for example, where no new characters are introduced in picture 19. Nevertheless, narrators often insert their own references in verbalizing this sequence, ranging form impersonal 'you' or 'one', as in *one can see the dragon from afar*, to more concrete references such as *the people from the village were able to see the dragon in the distance*.

The other relevant factor is referential distance, due to the temporary absence of the main character from the pictures. With the verbalization of the 'target' viewpoint shift picture, the protagonist has usually not been mentioned in one or (more often) a number of clauses. The strong effect of viewpoint is therefore also consistent with the expectations concerning referential distance put forth in chapter 3.

Lastly, in spontaneous stories viewpoint shifts, referential distance and intervening referents often naturally coincide, but for current purposes we want to disentangle the influence of these component factors. The regression analysis presented in chapter 6 allows us to disentangle a number of factors that are simultaneously involved in the visual viewpoint shifts, and it also allows us to measure the factors referential distance and intervening reference more precisely.

Page breaks

There is a significant relation between page breaks and referential form. A break between two pictures leads to a slight increase in the proportion of proper nouns, immediately after the page break. The comparison with other variables however, suggests that the factor is of less importance than the discourse-structural factors. The results reported in 5.7 support the view that the *conceptual*, or, *content* representation of the narrative – reflected in visual viewpoint and episode shifts - is more influential for referential form than 'surface' *attention* factors such as page breaks.

It can be concluded that the extent of a referential dominion, relative to which pronominal reference is maintained, largely depends on the narrative structure of the ongoing discourse (cf. the discourse-structural factors discussed above) and certainly not only on fluctuations of attention. Tomlin (1987), who also relates referential form to episodic structure, understandably suggests that 'vague' conceptual notions such as topic and paragraph (in my terms, episodes) should be replaced by more precise psychological notions such as attention. However, the results indicate that, in the assignment of referential form, conceptual narrative structure is more influential than the allocation of attention. In addition, the idea of replacing discourse notions by the psychological notion of attention leaves open the question what ultimately drives the allocation of attention in *spontaneous* narrative

production, if not narrative content. Although it is entirely plausible that attention flow and concept activation are crucially intertwined with narrative structure and referential form, we cannot, it seems, dispense with 'vague' conceptual notions such as episode. Moreover, in the present operationalization the notion episode can be related in a rather straightforward manner to the situation model framework, which arguably eliminates some of the vagueness that Tomlin rightly objects to.

It is plausible that in (spontaneous) narrative production the evolving narrative representation in terms of episodes naturally coincides with the allocation of attention and the assignment of referent salience.

Character Perspective

The results presented in section 5.6.2 indicate that character perspective is significantly related to referential form. Narrators tend to use pronouns rather than proper nouns if the target referent is itself construed as conceptualizer. This is even valid for the subtle perspective category analysed here, namely implicit perspective, where responsibility for both wording and content of the proposition remains with the narrator (as in direct narrative).

The category *free indirect discourse* could not be assessed separately in the statistical analysis, because it hardly occurs in the corpus. The question whether the *degree* of character influence correlates with the tendency to pronominalize the character referent, is therefore left to further research. Further, the results should be interpreted with some caution, due to the fact that it is sometimes difficult to unambiguously assign a single perspective category. Moreover, as Sanders (1994: 75) notes, character perspective is often continued by default, even in the absence of specific linguistic clues. This means that the category implicit perspective probably occurs more often than it was annotated as such.

Narrators also tend to use proper nouns in reference to the protagonist, when the clause is presented through the perspective of *secondary* characters. This concerns sentences such as: *The tourists went looking for the strange thing they'd seen in the woods and then they found Maartje / the girl.* In evaluating this result it must be kept in mind that these cases also involve the intervention of other referents, possibly functioning as local intervening topics, which may also be the factor triggering repeated proper nouns in such cases[10].

The results presented in table 21 also indicate that at the onset of episode boundaries, the proportion of proper nouns is lower when it is presented from an embedded character perspective, than when it is reported through direct narrative. We may conclude, then, that character perspective may override the tendency to repeat full reference after episode boundaries.

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[10] An interesting question would be to try and disentangle intervening reference form secondary character perspective. This could possibly be done by comparing cases such as 'They brought X home' (intervening reference in direct narrative), to cases like 'They saw X' (intervening reference in implicit perspective). I expect that in the latter case, reference to X more often occurs through proper nouns.

The factor character perspective seems to be of a somewhat different nature than the ones discussed above: in perspectivized segments, the selection of referential form might be determined not only with respect to the situation of the discourse participants (the assumed salience level of the intended referent), but also with respect to the *content* of the current discourse segment, such as referent salience for embedded story participants (cf. also Sanders & Redeker 1996). Emmott's (2003) analysis of narrative fiction also demonstrates that perspective phenomena and the representation of what she calls 'social space' sometimes lead to referential forms that cannot be explained in terms of salience for the assumed reader or hearer[11]. The data obtained here might be explained as follows: Due to the role of the intended referent as conceptualizer, such a character is presented as salient and is pronominalized.

The question of how to account for the relation between character perspective and referential form might also be related to the question whether referential expressions may serve as discourse markers. That is, it might involve the general question whether proper nouns or pronouns are a mechanic result of (assumed) attention fluctuation for the writer / reader, or whether they have the communicative function of contributing to the organization of discourse (in terms of aspects such as episodic and perspective structure).

Summary

Summarizing, the frequency analyses demonstrate that the factors described in chapter 3 are all significantly related to the referential forms used in references to the story protagonist in the collected corpus. This in turn lends support to the extended reference point model proposed in chapter 2. The results indicate that the grammatical and discourse factors that can be assumed to affect referent salience within the current context, indeed affect referential form.

The next chapter offers a complementary analysis of the collected corpus: chapter 6 presents a regression analysis of the distribution of proper nouns versus pronouns in the corpus, in order to assess the relative influence and interaction of various factors. It also addresses the factor referential distance, not dealt with (as a separate factor) in the current chapter.

[11] Cf. chapter 2, section 2.5.7, example (34)

Chapter 6
The probability of proper nouns
A regression analysis of the collected corpus

6.1 Introduction

This chapter takes a complementary approach to the analysis of referential choice presented in the previous chapter: it aims to assess the individual importance as well as the interaction of the factors referential distance, episode shifts, viewpoint shifts, intervening referents, and syntactic function, in the selection of referential form (i.e., the second part of research question 3, chapter 1). To this end, a regression analysis was conducted on a selected part of the corpus, which was annotated word-by-word for the relevant factors.

The next section gives the motivation for the type of analysis used, i.e. logistic regression analysis. Section 6.3 describes the basic design of the regression analysis. The factors and hypotheses are presented in 6.4. Section 6.5 describes the preparation of the material to be analysed. The regression analysis itself is presented in section 6.6. The results are interpreted in the discussion section 6.7.

6.2 Motivation for the regression analysis

The logistic regression analysis reported in this chapter is aimed at estimating the probability of the use of proper nouns (rather than pronouns) in reference to the protagonist, at a particular point during the discourse, given all the relevant factors that apply at that moment. The predictor variables concern the factors mentioned above and their relative and/or cumulative effect on the narrators' choice between proper noun and pronoun, in references to the protagonist. The theoretical aim of the analysis is to uncover which factors are most important in a narrator's choice to repeat proper nouns in reference to the story protagonist.

Although the previous chapter confirms a significant relation between referential form and a number of grammatical and discourse factors, it does not provide us with a *direct* indication of the relative importance of each of the significant factors[1]. The regression analysis allows us to ascribe a certain *weight* to each individual factor, and thereby to compare their individual contribution to referential form.

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[1] Although one might, on the basis of the frequency analysis, compare the observed proportions of proper nouns for various significant factors, which does give some indication.

One further difference between the regression analysis presented here and the previous analysis is that the various regression models allow us to analyse the relevant factors both individually and in combination. This relates to another reason for conducting this regression analysis, namely the aim to *disentangle* certain factors that are related to each other: In real-time text production, several different factors may co-occur at a particular point; in addition, certain factors assumed to affect referential choice may themselves consist of intertwined characteristics that *necessarily* co-occur: Referential distance, for example, consists of both intervening words and intervening clauses, each of which might be the relevant factor for repeated proper noun use. To give another example, consider the implemented variable *visual viewpoint*, analysed in chapter 5. This variable usually (but not always) includes not only a narrative structural shift, but also the temporary absence of the main character and the introduction of other characters. This variable therefore exerts its influence through the factors viewpoint shift, referential distance and intervening reference. A regression analysis such as the one presented here permits us to disentangle the relevant factors.

Given the fact that the regression analysis allows us to assess the individual weight of a certain factor, we can also estimate the referential form used in a situation in which more than one factor applies, by adding up the weight of individual factors. Also, we can extrapolate from the data and make some estimations for situations that do not (or hardly) occur in the corpus: By combining individual weights of factors that occur in isolation, we can estimate the probability of a repeated proper noun in the rare or hypothetical case that these factors coincide. For example, episode shifts and intervening referents hardly co-occur in the elicited corpus, but adding the weights of these factors allows us to estimate the chance for a repeated proper noun in case they would[2].

Further, the particular type of multiple regression analysis used here – multi level modelling – explicitly takes into account the fact that observations (references) are nested within pictures and within participants, the effects of which are also reported. Another characteristic of the present analysis is that it does not report frequencies of observed reference types (proper nouns versus pronouns mostly), but rather the *estimation* of the repeated use of proper nouns at particular points during discourse production. That is, the results do not report observed cases, but rather (population) estimates based on those observed cases.

Lastly, an advantage of the present approach is that it incorporates the continuous variable of referential distance, which allows us to track the *development* of chances for repeated proper nouns. In this analysis we can also combine the continuous variable referential distance and dichotomous variables such as episode, within a single model. Furthermore, the analysis comprises a more detailed account of the distance variable than in previous research.

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[2] Note that estimating the probability of a referential form in case more than one factor applies, by adding the weights of two or more relevant factors, is possible only *within* a *single* regression model: In some cases factors are correlated and their individual weights are independent only if they are included in one single regression model.

In sum, the regression analysis enables us to assess, for each moment during the course of the narrative, and given all the factors that apply at a particular moment, the chance that a narrator will use a proper noun rather than a pronoun. It also allows us to assess the relative importance and relatedness of various factors.

6.3 Description of the logistic regression analysis

The type of analysis used here is logistic multiple regression: Given a dichotomous dependent variable (here, referential form), the predictor (independent) variables Xi ... Xn, and a value Y of the dichotomous dependent variable, regression allows us to predict the probability of Y occurring, given known values of Xi ... Xn. Regression models are defined in terms of one or several of the relevant factors. These models give estimated proportions of the use of a proper noun, given known values of the factors mentioned above.

In what follows I will describe the design of the regression analysis and provide a description of the type of data reported in the tables.

Design of the regression analysis

The regression analysis gives an estimation for the referential form (the dependent variable), for a reference to the protagonist at a particular point during the discourse (i.e., the target reference). The dependent variable *referential form* is categorized as a dichotomous variable comprising the values proper noun versus pronoun[3]. Given the predominant use of pronouns, the analysis given below reports the estimated probability of *repeated proper nouns* (rather than pronouns). That is, for present purposes, pronouns are considered the *default* coding for topical entities in narratives[4]. The empirical objective of the model is to determine which grammatical and/or discourse factors are directly involved in overruling or 'cancelling' the default continuance of pronominal reference and in triggering repeated full reference to the protagonist.

I use three criteria for including explanatory factors: (i) the theoretical import ascribed to a factor in chapters 2 and 3; (ii) the statistical significance of these factors as established in chapter 5; and (iii) suitability of the factor in the analysis.

As for the latter criterion, a number of factors are excluded: The factor character perspective is excluded because it cannot be linked exclusively to the

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[3] Strictly speaking, this dichotomy involves the values explicit reference (mostly proper nouns) versus attenuated (mostly pronominal) reference. This classification is justified by the distributional data reported in chapter 5.

[4] This does not necessarily imply that such a default pronoun is part of the production rules for topical referential expressions, although this may be a reasonable interpretation, given the overall frequency of pronoun use in reference to discourse topics. The eventually selected regression model can be interpreted as reflecting, to a certain extent, a theoretical model for the factors involved in cancelling the default continuation of pronouns.

pictures. The variable page break is also excluded because I selected only condition 3, in which page breaks and episode boundaries coincide. As argued in the previous chapter, this is the most natural condition, most resembling of spontaneous discourse production. The variable linear position, lastly, is not included as a separate factor. Its influence in the present analysis is captured in the various distance measures, which take into account both distance to previous reference and the form of preceding coreference.

The analysis ultimately aims at selecting a regression model which is able to predict, as accurately as possible, the selection of referential form at various points during the production of the narrative. The statistical criteria for selecting such a model are as follows: (i) the model includes as few parameters as possible; (ii) all parameters contribute significantly to the estimated probability of a proper noun; (iii) the model yields a high percentage of correctly predicted cases.

Regression tables

The reported regression tables include parameter estimates for the constant, for the relevant factors, and for the variance of the nesting levels participant and picture. These will be described in turn.

Each model includes a *constant*: the constant reflects the estimated probability of a proper noun, if no factors are taken into account. This means that the value of the constant generalizes over all possible factors. Alternatively, if factors are included in the model, the constant reflects the estimated probability of a proper noun for the cases in which those factors do *not* apply. In the case that one or several factors are included in the model, therefore, this means that the value of the constant reflects the combined effect of other possible factors, not currently accounted for in the model. To give an example, in a regression model including only episode shifts as a factor (model 3), the parameter estimate for the constant (representing the estimated probability of proper nouns) reflects all those cases in which there is *no* episode shift, which means that the constant reflects the influences of other possible factors, such as viewpoint and referential distance. This explains why the constant varies for each model, depending on the factors that are included. In other words, the parameter estimate for the constant varies per regression model, depending on the division of the analyzed material, i.e. between those cases that reflect a particular value of the included factors (predictor variables), and those that do not.

The models give parameter estimates for included *factors*, indicating their relative positive or negative weight in triggering repeated proper nouns, within the presented model. As for the factors added to previous models, the *order* in which they are included does not affect their weight. However, as with the constant, the significance and estimated proportion of proper nouns for a certain factor may vary depending on the other factors that are taken into account within the same model.

Tables include the regression coefficients in logits (labelled β), which is a measure indicating the negative or positive weight of a factor. Tables also include the standard error of the regression coefficient (in brackets), and, if applicable, the estimated proportion of proper nouns, given a particular value of the relevant factor,

e.g. the proportion of proper nouns after an episode break. (This is not possible for the continuous variable referential distance, as I will explain below). In some cases estimated proportions are given in a separate table.

Given the nature of the data – repeated observations are nested within pictures and within individual participants – a *multi-level* regression analysis was used (cf. Quené & van den Bergh 2003). The tables therefore consist of two parts: A fixed part and a random part. The fixed part gives the parameter estimates for the constant, and for the relevant factors. The random part gives the variance estimates for the nesting levels participant and picture. (Only in tables 1 and 3 below, which summarize the basic clause and word model without any factors, these variance estimates are given in the same part of the table). The estimates for these nesting levels indicate variance between pictures and between participants, given the factors that are currently accounted for. If these estimates are significant, this means that there is a significant individual effect of the embedding picture and / or narrator on referential form. Variance between pictures can be explained in terms of different content displayed in the various pictures, some of which is, and some of which is not, captured by the implemented variables episode and viewpoint. Variance between participants reflects the differences between individual narrators; a decrease in participant variance indicates that some of these differences disappear due to the factors accounted for in the model.

In the regression tables, the mean estimated proportion of proper nouns is based on the *weight* of the relevant factor (coefficient β as given in the table), and is calculated from the logit values[5]. For the calculations, see appendix to this chapter. In the appendix I also report the estimated minimum and maximum proportions within the 67% confidence interval (within pictures and/or participants).

6.4 Predictor variables and hypotheses

In this section I present the factors that are expected to trigger the repeated use of proper nouns, to be included in the regression models.

Referential distance

The regression analysis starts from a fine-grained analysis of the factor referential distance. The establishment of a basic distance-based model allows us to assess more accurately the additional influence of other factors as possible additions to the distance model, or specifically, the factors that might induce narrators to deviate from the basic distance-based pattern.

The factor referential distance involves the textual distance between corresponding protagonist references. Contrary to earlier research on referential

[5] In order to derive estimated proportions from the coefficients reported in logits, the formula $1/(1+e^{-x})$ is used, where e is the natural logarithm (ln, ≈ 2,71828), and x is the coefficient for either the constant or the constant plus factor(s) in logits.

distance (e.g. Givón 1983), the factor is not modelled as a binary factor i.e. involving the question *whether* it occurred in the immediately preceding clause / sentence, but as a continuous factor, i.e. involving the question *when* preceding coreference occurred. This approach enables us to make predictions as to referential choice at a particular *time* during production.

Words as well as clauses are considered plausible units for measuring distance. We can make a gradual distinction between words and clauses, in terms of the kind of material included in the textual distance between consecutive corresponding references: (i) *words* as a measure of time elapsed; and (ii) *clauses* as information units or units of thought. To be sure, words also encode information units (although differing in degree, for example in the distinction between function and content words), and clauses also reflect a temporal measure (although clauses are more variable in length than words). This distinction between 'words as time' and 'clauses as information' is therefore one of degree rather than kind, but the question which of those is more influential in referential choice might still shed light on the nature of the influence of referential distance.

Apart from the distinction between words and clauses, I include the distinction between (i) distance from the preceding reference (proper noun or pronoun) to the (target) protagonist reference, and (ii) the distance from the preceding coreferential *proper noun* to the (target) protagonist reference. (The factor distance between a preceding *pronoun* and the target reference can be extracted from these two measures).

The hypotheses concerning referential distance as put forth in chapter 3 are repeated below:

> **Hypothesis referential distance in terms of clauses**
> The probability to use proper nouns (rather than pronouns) increases with the number of clauses intervening between consecutive references.
>
> **Hypothesis referential distance in terms of words**
> The probability to use proper nouns increases with the number of words intervening between consecutive references.
>
> **Hypothesis repeated name constraint**
> The probability to use proper nouns decreases immediately after a preceding coreferential proper noun.

Episode boundaries

Chapter 5 established a significant relation between episode structure and the distribution of proper nouns and pronouns. Episode boundaries are therefore included as a factor in the regression model. The hypothesis concerning episode boundaries is repeated below, slightly adapted for purposes of the current analysis:

> **Hypothesis episode boundaries**. The probability of the use of proper nouns increases immediately following an episode boundary.

Visual viewpoint shifts
Chapter 5 established a significant relation between viewpoint shifts and referential choice. Viewpoint shift, therefore, was also included as a factor in the regression model. Since the viewpoint variable also includes intervening characters and increased referential distance, I will also analyse whether viewpoint shifts contribute to the repetition of proper nouns, even when the influence of referential distance and intervening referents is also included in the model, i.e. is already accounted for.
The hypothesis for viewpoint shifts is as follows:

> **Hypothesis viewpoint shifts.** The probability for the use of proper nouns increases after visual viewpoint shifts.

Lastly, it should be kept in mind that the factors viewpoint and episode exclude each other since they are implemented in different pictures (cf. the annotation below), i.e. they never occur simultaneously.

Intervening referents
As pointed out in chapter 3, reference to secondary characters is expected to diminish the salience of the main character, triggering the repeated use of proper nouns. In the present corpus, this tendency is not a matter of avoiding ambiguity, since all intervening referents (depicted as characters in the visual story) do *not* agree with the main character in gender or number. The factor of intervening referents is also involved in the *viewpoint* factor, the effect of which is reported in the previous chapter. Here intervening reference is analysed as an individual factor.
The hypothesis concerning intervening referents, adapted from chapter 3, is as follows:

> **Hypothesis intervening referents**
> The probability for using a proper noun in reference to the protagonist increases in cases in which continued reference to the protagonist has been interrupted by reference to *another* character.

Syntactic function
In the collected corpus, the protagonist is predominantly coded as subject – which is usual for discourse topics. The analysis in chapter 5 established that syntactic function is significantly related to the proper noun / pronoun pattern. In many cases, non-subject references to the protagonist also involve the appearance of a secondary character as subject and local topic. In order to assess the extent to which it is the syntactic function *itself* which contributes to repetition of proper nouns in non-

subject references to the protagonist (rather than the local topic status of a secondary character intervening as subject), the factor of *non-subject* syntactic function was included in the model (i.e. ignoring the distinctions between direct and indirect object, and oblique complement). The question, then, is whether non-subject status significantly contributes to the estimated probability of repeated proper nouns, in cases in which intervening reference and referential distance are already included in the model.
The hypothesis for syntactic non-subject function, adapted from chapter 3, is presented below:

> **Hypothesis non-subject function**
> The probability for using a proper noun increases if the intended referent does *not* function as subject of the embedding clause.

Presentation of predictor variables
Note that the order in which the factors are presented, both here and in the regression models in 6.6, diverges somewhat from the order in which they are presented in previous chapters. This is done for the following reasons: (i) the aim is to first establish a basic distance-based pattern of references; (ii) the organization follows the distinction between the distance factor, the discourse-structural factors, and the clausal factor syntactic function. The reported percentages of correctly predicted cases are also given based on this basic distinction.

6.5 Material

I annotated condition 3 of the collected corpus, i.e. the condition based on five pictures per page in the visual stimuli, in which episode boundaries and page breaks coincide. The corpus was annotated word-by-word in which each word (case) was coded for the following characteristics:

- Number of the narrator / participant
- Number of the embedding picture (1-25)
- Whether or not the word occurs in a viewpoint shift picture (pictures 9, 10, 15, 20, 24)
- Whether or not the word occurs in an episode shift picture (pictures 6, 11, 16, 21)
- The consecutive number of each consecutive word within a single story / participant.
- The consecutive number of each consecutive phrase within a single story / participant[6].

[6] A preliminary analysis revealed that phrases and sentences, contrary to words and clauses, do not represent accurate measures for referential distance.

- The consecutive number of each consecutive clause within a single story / participant.
- The consecutive number of each consecutive sentence within a single story / participant[7].
- Whether the word is a reference to the protagonist, a secondary character, or *no* character reference.

Words representing a character reference were further coded for the following characteristics:

- The consecutive number of each consecutive reference (within a single story / participant).
- Syntactic function (subject, non-subject)
- Referential form (proper noun vs. pronoun)[8]

Using the MLN and MLWiN statistics programs, the data file was transformed such that words occurring *between* references to the protagonist (indicating the distance between previous coreference and target reference), and words occurring *between* proper noun references to the protagonist and other references to the protagonist, are coded separately as independent variables. The latter two are distinguished so as to take into account the *form* of preceding coreference, rather than just the distance between corresponding references. References to characters other than the protagonist (i.e. when the value of the variable *referent* is other than protagonist) are also re-coded into the independent variable *intervening referents*.

Also, a second set of data was created for purposes of measuring referential distance in clauses. To this end, intervening words were removed, and 'double' protagonist references within a single clause (possessives, epithets) were also removed[9]. Intervening clauses *not* containing a referring expression were added as cases. This resulted in a dataset in which each clause (rather than word) represents a case, whether or not it contains a reference to the protagonist, and if it does, only one reference per clause.

---

[7] Cf. previous note.

[8] Based on the distribution found in the previous chapter, referential form is coded as a dichotomous variable into full versus attenuated reference. Since these are mostly proper nouns and pronouns, that is how they are represented in the tables.

[9] This is necessary for a practical reason: since the clause is the unit of measurement for the factor distance, it can only be analysed if there is at most one reference per clause.

6.6 Logistic Regression Models

The regression analysis reports the weight and interaction of the factors referential distance, episode, viewpoint, intervening reference, and syntactic function. I present a number of regression models, varying in the number and type of factors that are included. The models indicate the weight of factors and the estimated probability of the use of a proper noun in reference to the protagonist, given a particular factor or combination of factors. Each model can therefore be seen as reflecting a particular theoretical account of reference maintenance: If the starting point is an account in which narrative protagonists (as topics) are by default pronominalized, each modeled factor can be interpreted as contributing to the repetition of proper nouns, insofar as it significantly increases the probability for a proper noun.

The regression models are expanded step-by-step: each factor is first analysed separately, and then in combination with other factors, so as to assess both the weight of individual factors, and factors in combination.

I made a basic distinction between two types of model, namely those measuring referential distance in terms of a word-per-word count, and in terms of a clause-per-clause count. Models based on the latter include fewer observations: if the clause is the unit of measurement, it necessarily includes only one reference per clause, excluding possessive expressions, reflexives, as well as a small number of 'double references' (such as for instance, *they found the poor girl, Maartje*). First, the basic model for the word-per-word count is presented.

6.6.1. Regression models based on constant

Regression model (1) – basic model, word-per-word count
The basic regression model describing only the constant is formalized as follows:

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (1)$$

In this formula for model (1), $Y_{i(jk)}$ describes the dichotomous variable referential form, specifically, it represents the probability of a proper noun for the i^{th} ($i = 1, 2, \ldots I_{(jk)}$) reference within picture j ($j = 1, 2, \ldots J$) and participant k ($k = 1, 2, \ldots K$). The parameter β_0 reflects the estimate for the constant, i.e. a measure for the probability of proper noun when no factors are taken into account. The random parameters $\mu_{0(0j)}$ and $\upsilon_{0(0k)}$ indicate the residuals (variances) for the nesting levels participant and picture respectively.
Parameter estimates for model (1), for the word-per-word count, are shown in table 1:

Table 1
Basic regression model, word-per-word count, (condition 3, $N_{i(jk)} = 1726$)
Parameter estimates for constant, pictures, and participants (standard error in brackets), as well as the mean estimated proportion of proper nouns.

	β	Estimated proportion proper noun	Variance estimate participants	Variance estimate pictures
Constant	-0.734 (0.139)	.32	0.088* (.045)	0.324** (0.119)

According to this basic model, the estimated proportion of proper nouns is .32. Further, there is a significant effect of both nesting levels, i.e., participant and picture[10]. This means that the embedding of a reference within a certain picture and / or participant significantly affects the probability for the use of a proper noun. The variance between pictures is much higher than the variance between participants: the verbalization of the different pictures yields more variation in proper nouns than the verbalization by different narrators. This is a first indication that narrators are similar in verbalizing the distinctions and factors implemented in the different pictures.

Regression model (1) – basic model, clause-per-clause count
Next, the same regression model is presented for the clause-per-clause count. The parameter estimates are given in table 2:

Table 2
Basic regression model, clause per clause count, (condition 3, $N_{i(jk)} = 1405$)
Parameter estimates for constant, pictures, and participants (standard error in brackets), as well as the mean estimated proportion of proper nouns.

	β	Estimated proportion proper noun	Variance estimate participants	Variance estimate pictures
Constant	-1.028 (0.214)	.26	0.011 *n.s.* (0.033)	1.041* (0.321)

The estimated proportion of proper nouns for this model is .26. In addition, in this model only picture level variances are significant.

[10] Significance levels, based on z-scores, are indicated as * ($p<.05$) and ** ($p<.01$). Note that the significance tests for the factors are two-tailed, and for the variance estimates they are one-tailed, since variance cannot be lower than 0.

6.6.2 Regression models based on referential distance

Regression model (2) – Referential distance, word-per-word count
The following model includes a number of distance measures: the distance between consecutive references to the protagonist (i.e. from the target reference to the preceding corresponding reference); and the distance (from target reference) to preceding corresponding *proper noun* reference. Note that, unlike the other factors, distance is a continuous factor. The factors episode, viewpoint, and intervening referents (to be addressed below) are dichotomous: the factor episode either does or does not occur, whereas distance to the preceding reference to the protagonist is a continuous factor (measured in the number of words). This entails that a single estimated proportion of proper noun cannot be given, since the distance factor (or rather, the three measures comprising this factor) yields a different proportion for each point on the continuous scale of the number of words. (For example, the estimated probability of proper noun at 10 words after a corresponding proper noun is different from the probability at 25 words). The continuous nature of the factor distance also entails that it can in principle be modelled as a non-linear (quadratic) function. If there is a quadratic function, there is a point at which the probability of proper noun changes direction (e.g., it decreases and after a certain number of words it increases again). This enables us to model the *development* of proper noun probability throughout the course of the narrative.

The distance model is summarized in (2). Again, $Y_{i(jk)}$ represents the probability of a proper noun for the i^{th} reference within picture j and participant k. The weight of the variable distance to preceding reference is represented as $\beta 1$*DIST_COREF $_{i(jk)}$; the weight of distance to corresponding proper noun, modeled as a *linear* function, is represented as $\beta 2$*DIST_PN $_{i(jk)}$; the weight of the variable distance to corresponding proper noun, modeled as a *quadratic* function, is represented as $\beta 3$*DIST_PN^2 $_{i(jk)}$. The variances for the nesting levels participant and picture are again represented as $\mu 0$ (0j) and $\upsilon 0$ (0k)[11].

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1\text{*DIST\_COREF}_{i(jk)} + \beta_2\text{*DIST\_PN}_{i(jk)} + \beta_3\text{*DIST\_PN}^2_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \quad (2)$$

Parameter estimates for model (2), based on the word-per-word count, are given in table 3.

[11] Note that in the remainder of this chapter, all the models are formalized in the same way, i.e. the weights of individual factors are indicated by β, the number of the factor (the order of which is random), and an abbreviation for the factor.

Table 3
Regression model, word per word count, including *distance to preceding reference, distance to preceding proper noun, distance to preceding proper noun as quadratic function* (condition 3, $N_{i(jk)} = 1726$, s.e.: standard error)

Fixed part		
	β	s.e.
Constant	-2.824	0.255
Distance to preceding corresponding reference	0.114**	0.012
Distance to preceding corresponding Proper Noun	0.084**	0.011
Distance to preceding corresponding Proper Noun^2	-0.0006**	<.001
Random Part		
Variance between Participants	0.030	0.045
Variance between Pictures	0.958**	0.319

Following reference to the protagonist (irrespective of referential form), the probability for use of a proper noun increases with the distance (as can be observed from the positive value for the variable 'distance to preceding corresponding reference', $\beta_1 = 0.114$). After the use of a corresponding *proper noun*, the probability of proper nouns first decreases and then increases again (as reflected by the quadratic function 'distance to preceding corresponding Proper Noun^2', $\beta_3 = -0.0006$). The initial decrease in probability of proper noun after a preceding proper noun is consistent with the earlier claim that two proper nouns closely following each other is infelicitous (Gordon et al 1993). There is no quadratic function for the factor 'distance to preceding corresponding reference': the chances for a proper noun begin to rise immediately after a corresponding reference (which is most often a pronoun), contrary to the chances immediately after a corresponding proper noun (cf. above). Since chances for a proper noun continue to rise after preceding coreference, there is no point at which the probability for a proper noun changes direction, hence no quadratic function.

It should be kept in mind that these measures do not constitute separate factors: rather, they reflect the pattern of alternating proper nouns and pronouns, and can only be properly interpreted in combination.

According to this model, the variance between participants is no longer significant, which means that most of the differences between individual narrators can be explained by taking into account the factor distance.

The variance between pictures *is* significant, in fact it is higher than when no factors are taken into account (previous model). An explanation might be: Now that the distance-based pattern is accounted for, deviations from this pattern, plausibly the ones caused by the factors implemented in the pictures, cause the increased variance at the nesting level of pictures.

The regression model including the distance factor allows us to correctly predict 78.3 percent of cases, on the basis of the fixed part of the model: if we know the values for the distance measures at particular points during the narrative, we can, in 78.3 percent of cases, accurately predict the use of proper noun or pronoun in reference to the protagonist. This is based on the correlation between observed and predicted cases. Note that this only holds for the fixed part of the model, thereby ignoring individual differences between participants and pictures.

Regression model (2) – Referential distance, clause-per-clause count

Next, the same distance-based model (2) is presented for the clause-per-clause count. The parameter estimates are given in table 4.

Table 4
Regression model, clause-per-clause count, including *distance to preceding reference, distance to preceding proper noun, distance to preceding proper noun as quadratic function* (condition 3, $N_{i(jk)} = 1405$, s.e.: standard error)

Fixed part		
	β	s.e.
Constant	-0.481	0.166
Distance to preceding corresponding reference	-0.482**	0.051
Distance to preceding corresponding proper noun	0.304**	0.033
Distance to preceding corresponding proper noun^2	n.s.	n.s.
Random Part		
Variance between Participants	0.000	0.000
Variance between Pictures	0.280**	0.109

The parameter estimates for the distance-based clause model are difficult to interpret: The distance to preceding corresponding reference has a *negative* effect on proper noun repetition[12]. However, this factor cannot be modelled as a quadratic function, which means that there is no point at which, after initial reference to the protagonist, the probability of proper noun starts to rise again. This might be due to the occurrence of references in *most* clauses; one would need a longer distance without corresponding references to model distance as a quadratic function. The most plausible explanation for this result, then, is that the clause measure is not detailed enough for an indication of distance-based proper noun repetition. As a result, models based on the clause-per-clause count do not enable us to adequately model the *development* of proper noun probability (i.e., its decrease and increase over time). Therefore, the rest of the analysis concerns the word-per-word count only. (The difference between the two measures will be addressed in the discussion section).

[12] Further note that, as in table 3, a single estimated proportion cannot be given, due to the continuous nature of the distance factor.

First I will look at the contribution of the dichotomous variables episode, viewpoint, intervening referents, and syntactic function, both individually and in combination. The distance factor is added later.

6.6.3 Regression models based on discourse-structural factors and intervening reference

Regression model (3) – episode shift
The next regression model no longer includes distance, and is based on the factor episode (β_1*EP) only. This model is summarized in (3), and parameter estimates are given in table 5:

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1 * EP_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (3)$$

Table 5
Regression Model (3), including the factor *episode boundary* (condition 3, $N_{i(jk)}$ =1726, s.e.: standard error)

Fixed part

	β	s.e.	Estimated proportion of proper nouns
Constant	-0.761	0.142	.32
Episode boundary	0.155 *n.s.*	0.138	

Random Part

Variance between Participants	0.088*	0.045
Variance between Pictures	0.328**	0.120

The estimated proportion of proper nouns for the constant, which in this model reflects all cases in which *no* episode shifts occur, is .32. This proportion is the same as in the basic model reflecting all cases. The parameter estimates indicate that episode shift, if it is the only factor taken into account, does *not* contribute significantly to the estimated probability for the use of repeated proper nouns.

This outcome is remarkable, given the results reported in chapter 5. However, it must be kept in mind that, as we shall see later, the value of the constant as given in model 1 also encompasses cases involving highly influential factors such as viewpoint, the effect of which as incorporated in the constant may suppress a possible effect of episode

Further note that variances for the levels participant and picture are significant.

Regression model (4) - Viewpoint shift

The regression model incorporating the constant and the factor viewpoint shift (the latter indicated as $VP_{i(jk)}$) is summarized in (4), followed by the parameter estimates and estimated proportions of proper nouns in table 6.

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1 * VP_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (4)$$

Table 6

Regression Model (4), including the factor *viewpoint shift* (condition 3, $N_{i(jk)}$=1726, s.e.: standard error)

Fixed part			
	β	s.e.	Estimated proportion of proper nouns
Constant	-1.037	0.150	.26
Viewpoint shift	1.357**	0.136	.58
Random Part			
Variance between Participants	0.115*	0.052	
Variance between Pictures	0.354**	0.129	

The estimated probability for the use of proper nouns is .26 for the constant, i.e. for all cases when *no* viewpoint shift occurs. The occurrence of viewpoint shifts significantly increases the probability for the use of a proper noun: the estimated probability of proper noun after a viewpoint shift is .58. There is also a significant effect of the nesting levels participant and picture.

Regression model (5) – episode shift and viewpoint shift
The next regression model includes both episode and viewpoint shifts. This model is summarized in (5), and parameter estimates are given in table 7:

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1 * \text{EPI}_{i(jk)} + \beta_2 * \text{VP}_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (5)$$

Table 7
Regression model (5), including factors *episode* and *viewpoint* (condition 3, $N_{i(jk)} = 1726$, s.e.: standard error)

Fixed part			
	β	s.e.	Estimated proportion of proper nouns
Constant (no shift)	-1.252	0.018	.22
Episode	0.837**	0.153	.40
Viewpoint	1.668**	0.150	.60
Random Part			
Variance between participants	0.124*	0.055	
Variance between pictures	0.483**	0.169	

Both after an episode shift, and after a viewpoint shift, the probability of proper noun use increases significantly. The estimated proportions of proper nouns in the situations *no shift* (discourse continuation), *episode shift*, and *viewpoint shift* are .22, .40 and .60 respectively. Because the factors episode and viewpoint exclude each other (do not occur simultaneously), the estimated probabilities should be interpreted as independent (i.e. not cumulative). Although the effect of episode is not significant if it is the only factor taken into account (table 5), it *is* significant if the factor viewpoint, which has a strong effect, is included. This means that in model (3) the latter factor acts as a suppressor variable for the factor episode: In model (3) the effect of viewpoint and other variables is incorporated in the constant (since all viewpoint shifts are necessarily also cases of *no* episode shift), which obliterates the possible effect of episodes. This might be illustrated *informally* by looking at the combination of estimated proportions of proper nouns for viewpoint (.60) and no shift (.22) combined, with an 'average' estimated proportion of .41, and by comparing this to the estimated proportion of proper nouns for episode (.40). This illustrates that there is hardly any difference between the context of episode

shift and no episode shift, if the latter context includes those cases in which viewpoint shifts occur. According to model (5), both episode and viewpoint contribute significantly to the repetition of proper nouns, although the latter is more influential.

Compared to the basic model (1), in which no factors are included, adding the implemented factors episode and viewpoint increases the variance for both participants and pictures. This is an indication that participants are similar in their response to episode and viewpoint shifts: the variance within the pictures involving episode and viewpoint shifts decreases, and at the same time, the variance for other pictures – which are more frequent – increases.

Regression model (6) – Intervening reference

The next step is to add the factor intervening reference to the basic model (1), which allows us to assess the individual weight of this factor. The model incorporating intervening reference (INT_REF $_{i(jk)}$) is summarized in (6) below, and the parameter estimates and estimated proportions are given in table 8.

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1 * \text{INT\_REF}_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (6)$$

Table 8

Regression model (6), including factor *intervening reference* (condition 3, $N_{i(jk)} = 1726$, s.e.: standard error).

Fixed part			
	β	s.e.	Estimated proportion of proper nouns
Constant	-1.084	0.152	.25
Intervening reference	1.837**	0.152	.68
Random Part			
Variance between Participants	0.142**	0.059	
Variance between Pictures	0.354**	0.129	

If no intervening references occur between corresponding references to the protagonist, the estimated probability for the use of proper noun in reference to the protagonist is .25. If on the other hand, the narrator mentions another character, subsequent proper noun reference to the protagonist increases significantly, and has an estimated probability of .68. The effect of the levels participant and picture is significant.

Regression model (7) – episode boundary, viewpoint shift, intervening reference
The next step is to combine the dichotomous discourse-structural factors presented earlier, namely intervening reference, episode and viewpoint. The regression model including these factors is summarized in (7), followed by table 9, containing the parameter estimates for this model.

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1 * \text{INT\_REF}_{i(jk)} + \beta_2 * \text{EPI}_{i(jk)} + \beta_3 * \text{VP}_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (7)$$

Table 9
Regression model (7), including factors *intervening reference, episode, viewpoint* (condition 3, $N_{i(jk)} = 1726$, s.e.: standard error).

Fixed part			
	β	s.e.	Estimated proportion of proper nouns
Constant (no shift)	-1.490	0.196	.18
Intervening reference	1.660**	0.171	.54
Episode	1.082**	0.156	.40
Viewpoint	1.178**	0.163	.42
Random Part			
Variance between participants	0.168**	0.066	
Variance between pictures	0.606**	0.208	

According to model (7), the three factors intervening reference, episode and viewpoint significantly increase the probability of the use of a proper noun.

If intervening reference is included in the model, the estimated probability for a proper noun after viewpoint shifts is not as high (.42) as in the case in which *only* viewpoint shift (which often co-occurs with intervening referents) is included (.58, model 4). The same thing happens with intervening referents, when compared to model (6) (table 8). The current model, then, *disentangles* the weight of these factors, and all remain significant. This regression model allows us to correctly predict 74.1 percent of cases, that is, based on the fixed part only.

Now that we can consider the individual contribution of these factors, we can give the estimated probability of these factors individually, as well as in combinations: The estimated proportion for combinations of factors is arrived at by adding the weights (the logit values) of the factors to the constant (cf. appendix). This can only be done if factors occur in a single model, because the regression model eliminates the interaction between them and gives only individual weights. Table 10 gives the estimated proportions for the (combination of) factors included in the above regression model (rare situations[13] indicated as #):

Table 10.
Estimated proportion of proper nouns based on regression model 7, including the factors episode, viewpoint, and intervening referents (condition 3, $N_{i(jk)} = 1726$)

	Estimated Proportion of Proper Nouns
Constant	.18
Intervening reference	.54
Episode without intervening reference	.40
Episode and intervening reference #	.78
Viewpoint without intervening reference #	.42
Viewpoint and intervening reference	.79

[13] Rare situations represent for example the co-occurrence of episode shifts and intervening referents, which are not portrayed simultaneously in the stimulus pictures.

6.6.4 Regression models based on syntactic function and other factors

Regression model (8) – Syntactic function
The following model (8) indicates the weight of the factor syntactic function alone.

$$\text{Logit}\,(Y_{i(jk)}) = \beta_0 + \beta_1 * \text{SYNT\_F}_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \qquad (8)$$

Table 11.
Regression model (8), including the factor syntactic (non-subject) function (condition 3, $N_{i(jk)} = 1726$)

Fixed part			
	β	s.e.	Estimated proportion of proper nouns
Constant (i.e., subject)	-0.829	0.139	.30
Non-subject function	0.968**	0.197	.53
Random Part			
Variance between participants	0.098*	0.048	
Variance between pictures	0.306**	0.113	

According to model (8), non-subject function significantly affects referential form: If reference to the protagonist has the syntactic function of direct object, indirect object or oblique complement, the estimated probability of the use of proper noun is .53, compared to .30 when it has subject function.

Regression model (9) – syntactic function, referential distance, intervening reference, episode boundary, viewpoint shift
In the following model, the factor syntactic function is added to the factors already analyzed above. The model is summarized in (9), and table 12 presents the parameter estimates for this model:

$$\begin{aligned}\text{Logit}\,(Y_{i(jk)}) = {} & \beta_0 + \beta_1 * \text{INT\_REF}_{i(jk)} + \beta_2 * \text{EPI}_{i(jk)} + \beta_3 * \text{VP}_{i(jk)} \\ & + \beta_4 * \text{DIST\_COREF}_{i(jk)} + \beta_5 * \text{DIST\_PN}_{i(jk)} + \beta_6 * \text{DIST\_PN}^2_{i(jk)} \\ & + \beta_7 * \text{SYNT\_F}_{i(jk)} + \mu_{0(0j)} + \upsilon_{0(0k)} \end{aligned} \qquad (9)$$

Table 12
Regression model (9), including factors *intervening reference, episode, viewpoint, distance to preceding reference, distance to preceding proper noun, distance to preceding proper noun as quadratic function, syntactic function* (condition 3, $N_{i(jk)} = 1726$, s.e.: standard error)

Fixed part		
	β	s.e.
Constant	-0.634	0.207
Intervening reference	1.351**	0.214
Episode	0.729**	0.187
Viewpoint	1.176**	0.195
Distance to preceding corresponding reference	0.384**	0.027
Distance to preceding corresponding proper noun	-0.287**	0.021
Distance to preceding corresponding proper noun^2	0.003**	<.001
Non-subject function	0.243	0.273
Random Part		
Variance between Participants	0.000	(0.000)
Variance between Pictures	0.338**	(0.134)

According to this model, syntactic function is no longer significant: If the weight of the factors referential distance, intervening reference, episode and viewpoint is accounted for, the inclusion of the factor syntax does not contribute significantly to the estimated probability of a repeated proper noun. The other factors all remain significant. This means that the factor distance on the one hand (presented separately in model 2), and the significant factors episode, viewpoint and intervening reference (presented in models 3 through 7), do not cancel each other out, but contribute independently to the probability of the use of proper nouns.

As in tables 3 and 4 above, table 12 does not report estimated proportions for the distance measures (because they give a different estimation for each point), *or* for the dichotomous variables, because these too differ for each given value of the (continuous) distance measures. (As we shall see in table 14 below, setting the distance at '0' offers a way around this problem).

6.6.5 Regression model based on all significant factors

Leaving out the factor syntactic function, we get the following model (10), which includes the distance measures, as well as the factors episode, viewpoint and intervening referents:

$$\begin{aligned}\text{Logit } (Y_{i(jk)}) = {} & \beta_0 + \beta_1 * \text{INT\_REF}_{i(jk)} + \beta_2 * \text{EPI}_{i(jk)} + \beta_3 * \text{VP}_{i(jk)} \\ & + \beta_4 * \text{DIST\_COREF}_{i(jk)} + \beta_5 * \text{DIST\_PN}_{i(jk)} + \beta_6 * \text{DIST\_PN}^2_{i(jk)} \\ & + \mu_{0(0j)} + \upsilon_{0(0k)} \end{aligned} \quad (10)$$

Table 13
Regression model (10), including factors *intervening reference, episode, viewpoint, distance to preceding reference, distance to preceding proper noun, distance to preceding proper noun as quadratic function* (condition 3, $N_{i(jk)} = 1726$, s.e.: standard error)

Fixed part		
	β	s.e.
Constant (no shift)	-0.621	0.207
Intervening reference	1.420**	0.198
Episode	0.733**	0.187
Viewpoint	1.180**	0.195
Distance to preceding corresponding reference	0.381**	0.027
Distance to preceding corresponding proper noun	-0.286**	0.022
Distance to preceding corresponding proper noun^2	0.003**	<.001
Random Part		
Variance between participants	0.000	0.000
Variance between pictures	0.350**	0.138

The distance measures, as well as the factors episode, viewpoint and intervening reference significantly affect the probability of proper noun use. This regression model allows us to correctly predict referential form in 80.3 percent of cases, on the basis of the fixed part. On the basis of *both* fixed and random part, i.e. taking into account individual differences at the nesting levels participant and picture, the model correctly predicts 85.7 percent of cases. This means that only 14.3 percent of referential forms cannot be accounted for on the basis of this model.

The following table presents the estimated probability of the use of a proper noun, relative to the (combination of) dichotomous factors included in the above

regression model. For each of these factors, the probability of proper noun can only be calculated with respect to a certain value for the distance measures. Therefore, in table 14 the distance between references is 'set at zero' (which does not of course occur in reality, since the minimum distance for consecutive references is 1 word). This is done so as to neutralize the effect of referential distance, and be able to give a stable estimate for the dichotomous variables episode, viewpoint and intervening reference.

The difference between the proportions reported in table 10 and those reported in table 14, then, is that in table 10 the factor distance is not taken into account (its weight distributed across the different parts of the material, i.e. across both constant and the three dichotomous factors), whereas in table 14 the *weight* of the factor distance is taken into account as a *separate* factor (i.e. disentangled from the three dichotomous factors). In table 14 its weight does therefore not influence the estimated proportions of the factors episode, viewpoint, intervening reference, and combinations thereof, as shown below.

Table 14
Estimated proportion of proper nouns based on model 10, (condition 3, $N_{i(jk} = 1726$)

	Estimated Proportion of Proper Nouns
Constant	.35
Intervening reference	.69
Episode without intervening reference	.53
Episode and intervening reference	.82
Viewpoint without intervening reference	.64
Viewpoint and intervening reference	.88

6.7 Discussion

The aim of this chapter has been to assess the weight of the factors referential distance (in terms of words and in terms of clauses), episode boundaries, viewpoint shifts, intervening reference and syntactic function, in estimating the probability of repeated proper noun use in protagonist references. The theoretical objective has

been to determine what factors are most important in accounting for the repeated use of proper nouns in reference to the story protagonist.

Summarizing, if all factors are taken into account, we find a significant effect of referential distance, intervening reference, episode boundaries, and viewpoint. When distance is taken into account, variance between participants disappears, which means that individual differences between participants are largely explained by the inclusion of this factor. The most accurate model, given the criteria presented in 6.3, is model (10), including the factor *referential distance in words* (i.e. the three distance measures) and the factors *intervening reference, episode, viewpoint*: All parameters are significant, and the model is able to correctly predict referential form for 80.3 percent of cases (85.7 percent if the nesting levels participant and picture are taken into account).

On the basis of model (2), including referential distance alone, we can already correctly predict 78.3 percent of cases (on the basis of the fixed part). One might argue, therefore, that adopting the distance-based model is the most viable option, at least not as 'costly' as the more elaborate model incorporating all significant factors. However, note that model (7) including only the context factors episode, viewpoint and intervening reference, also correctly predicts 74.1 percent of cases. This means that some of the effects of episode, viewpoint and intervening reference are incorporated in the distance model, and vice versa. Given the fact that these factors are intertwined (i.e. occur at the same time and are related), we can only disentangle their individual influence if they are included within a single regression model. Since all factors remain significant in the single model (10), this model is adopted as having the most explanatory power.

In what follows I will address the individual factors and some further results from the regression analysis.

The regression analysis indicates that distance is a crucial factor in determining referential choice. In research on discourse reference, both distance and discourse structure have been proposed as the main determinants of the repetition of explicit reference. Tomlin & Pu (1991) distinguish between what they call the distance model and the episode model as competing accounts of discourse reference. In recent years it has been proposed that the observed increase in repeated proper nouns after intervening clauses / sentences (Givón 1983 inter alia) should be considered an epiphenomenon to the hierarchical structure of discourse (Tomlin 1987 inter alia): since episode and other discourse structural shifts naturally occur at distance intervals, an effect of linear distance might emerge as a side-effect of discourse shifts.

The results obtained here indicate that repeated proper nouns as a function of referential distance cannot be interpreted as an epiphenomenon to the hierarchical structure of discourse, since distance remains significant in models that take into account the discourse-structural factors. It can be concluded that referential distance has a strong *independent* effect on the repetition of proper noun references to protagonists, and it cannot be reduced to an effect of discourse structure. (And,

anticipating the discussion of the discourse-structural factors, neither can discourse structure be reduced to an effect of distance).

It was further observed that, for predicting the probability of proper noun, words are a better measuring unit for referential distance than clauses. Recall that I made a (gradual) distinction between the influence of words as processing time between consecutive references, and clauses as reflecting intervening propositional information. If indeed this assumption is correct, the most plausible explanation for the stronger effect of intervening words is that the distance factor involves the influence of processing time on concept activation, and thereby on the narrator's assignment of referent salience and referential form.

Due to the influence of processing time, then, it might be plausible to assume that referential choice is highly affected by (assumed) concept activation. In previous chapters I proposed that referent salience is *not* to be equated with concept activation *for the narrator*: by the time the referent is ready to be verbalized (whether through a pronoun or a proper noun), the referent must be highly active in the mind of the discourse producer, but of course not necessarily in the mind of the hearer / reader. Referential choice is therefore to a large extent tailored to *assumed* activation for the hearer / reader.

Another interesting finding is that viewpoint remains significant, also when intervening reference is taken into account, and also when referential distance and intervening reference both are taken into account. It seems that viewpoint, in its effect on referential form, can be interpreted as an individual narrative structural factor, comparable to episode, rather than a combined effect of referential distance and intervening reference only. On the basis of these results, one might even speculate whether (visual) viewpoint could be interpreted or classified as a narrative parameter affecting situation model representations (comparable to time, location, cause, motivation, and character, as distinguished in Zwaan & Radvansky 1998). This might be an interesting area for further research.

Episode boundaries also turn out to significantly affect referential form. However, it is not significant if no other factors are taken into account. In the latter case, the influence of other factors (incorporated in the constant, i.e. all cases which do *not* reflect episode boundaries) obliterates the effect of episode boundaries. If other significant factors are included in the model, episode shifts significantly increase the probability for the use of a proper noun. This means that episode is not *the* factor but one among several significant factors in triggering repeated proper nouns. Whereas the percentages in chapter 5 seem to suggest that episode is far less influential than viewpoint, the present analysis indicates that episode is about as influential as viewpoint (once factors co-occurring with viewpoint are disentangled from it).

The factor syntactic function, established as significant in chapter 5, does not contribute significantly to a regression model in which other (significant) factors are included. These results do not seem to be in line with results obtained in Centering theory (Gordon et al. 1993 inter alia), which suggest that subject function is a good predictor of continued topicality and pronominalisation. The results

concerning the syntax factor do not mean that the relation between syntactic function and referential form, as established in the previous chapter and in model 10, has become invalid; narrators still use more proper noun references in non-subject references than in subject references. But the factor syntactic function does not contribute significantly to the estimated probability of the use of proper nouns, once other significant factors are taken into account. The most plausible explanation, in my view, is that it is not syntactic function in itself which triggers the use of proper nouns in non-subject references, but rather factors that usually coincide with non-subject function for the protagonist, such as an intervening local topic[14]. On such a view the relation between syntactic function and referential form is one of co-occurrence rather than causation. It is conceivable that discourse level referent salience affects both the selection of pronouns and the preferred choice for syntactic subject function. A salience preference for the assignment of subject function is consistent with Chafe's (1994) *light subject constraint*: this constraint holds that a syntactic subject be either an accessible referent, or a new referent which however does not function as topic referent in the rest of the discourse[15].

A tentative proposal for the coding of character references in narrative production might be that both pronominalization and subject function might be linguistic means to mark referent salience. High referent salience might not only lead the narrator to use a pronoun, but also, if the internal structure of the embedding sentence allows it, to code the intended referent as syntactic subject.

On the basis of the adopted model (involving referential distance, episode, viewpoint and intervening reference), it is possible to make a broad distinction between two basic mechanisms involved in referential choice: (i) the linear distance between consecutive references, independent from the content of the narrative discourse, and possibly directly affecting concept activation (what one might therefore plausibly call a 'surface' factor); and (ii) the hierarchical structure of the discourse, which *does* involve narrative content, the structure of which is possibly *signalled* by repeated proper nouns. The factor intervening reference, which is also highly influential, might plausibly fall somewhere in the middle, and can be associated with both these mechanisms.

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[14] The results obtained here also seem to be in line with Van Hoek's proposal for the relation between *sentential* coreference constraints and the characterization of syntactic functions in terms of prominence: namely, that it is not the syntactic (c-command) function per se which determines anaphora constraints (which can after all be overridden by semantic influence), but rather, the different prominence levels *associated* with different syntactic functions.

[15] Consistent but not identical: Chafe formulates a salience *restriction* on the assignment of subject function, the results obtained here might suggest a *preference* for subject assignment in such cases.

Chapter 7
Meaning and Use of Proper Nouns and Pronouns
Conclusion and Discussion

7.1 Conclusion

In the maintenance of reference to narrative characters, the choice between proper nouns and pronouns is mostly guided by two mechanisms: (i) a distance-based alternation of proper nouns and pronouns, independent of narrative content, and (ii) the narrative structure of discourse, which 'breaks into' the distance-based alternation, and triggers repeated proper nouns. These linear and hierarchical mechanisms cannot be reduced to each other, although both can be assumed to exert their influence through the fluctuation of (assumed) referent salience. This relation between context factors and referential form stems from the salience characteristics inherent in the nominal semantics of the categories proper noun and pronoun.

Contribution of the study

The aim of this study has been to provide a comprehensive account of reference maintenance in online narrative discourse production, for both the sentence and the discourse level, within a unified theoretical framework.

Although most of the factors established here have been addressed earlier in the literature, most of these studies involve case studies and/or carefully edited texts. In addition, most studies do not offer a systematic statistical analysis of data obtained under maximally controlled experimental conditions. In most cases only one or two of the relevant factors are captured within a single analysis.

The contribution of this study is that it offers a broad and systematic analysis of reference maintenance: it encompasses many factors within the same study; it provides an analysis of the *online* influence of these factors in the production of discourse; it offers a detailed characterization and analysis of the relevant factors, such as episode structure and referential distance; and it offers a unified theoretical explanation for the influence of these factors in terms of referent salience. These contributions will be briefly addressed in turn.

The use of a corpus consisting of online production data has enabled us to analyse referential patterns in texts that are similar to spontaneously produced written narratives. That is, instead of describing referential patterns in carefully edited texts, the analyses offered here concern referential patterns in online discourse production, thereby providing insight into the way the relevant factors influence referential choice throughout the *time course* of narrative production.

The analyses presented in foregoing chapters have revealed not only *whether* a factor is important in referential choice, but also the *extent* to which it influences referential choice, and the question if and how certain factors are related to each other. The analyses have disentangled a number of related factors, providing a way of distinguishing a hierarchy in the relevant factors. The results allow us to give a fairly accurate estimation of the points at which a narrator might repeat a proper noun in reference to protagonists, in narratives such as the ones analysed here. With the analysis of several factors simultaneously involved in consecutive references embedded within stories, I have also further demonstrated the usefulness of the method adopted in chapter 6, i.e. multi-level modelling.

The study has presented a detailed operationalization of particularly referential distance and episode structure. Most of the research involving the factor referential distance has addressed the question *whether* a referent occurs in immediately preceding clauses or sentences, rather than *when* it occurs in preceding clauses or sentences, not to mention preceding words. In considering referential distance as a continuous factor, measuring it in terms of both clauses and words, and also taking into account the *form* of preceding coreference, the analysis offered here sheds more light on this important (and, as it turns out, independent) factor in referential choice. Particularly the use of words rather than clauses has allowed us to model the *development* of referential choice over time.

The factor episode has been operationalized as a discourse level correlate of conceptual connectivity (the latter also comprising the sentence level), using the empirically established narrative parameters distinguished in the situation model framework (Zwaan & Radvansky 1998). Apart from adopting the characterization of prototypical episodes as reflecting spatiotemporal shifts, I have proposed a refinement of episode structure in terms of situation model connectivity, specifically, in terms of its component parameters time, location, and character (and plausibly motivation/goal and cause). This has resulted in a detailed characterization of episodic structure, which allows us to distinguish episode transitions that differ in strength and in kind. The usefulness of this approach has been demonstrated in the finding that the tendency to repeat proper nouns increases with the number of shifted narrative parameters.

As for the theoretical approach, the study attempts to situate the phenomenon of reference maintenance within the framework of Cognitive Linguistics. It has been confirmed that theoretical constructs for the analysis of (sentential) anaphora constraints (Van Hoek 1997) can be used to describe referential patterns at the level of narrative discourse. It has further been shown that cognitive linguistic notions such as conceptual connectivity, distinguished in the adopted reference point model, can be successfully operationalized for quantitative analysis, and that the operationalized factors indeed significantly affect the use of proper nouns and pronouns at the level of discourse. Van Hoek's conceptual-semantic account of sentential full nominals and pronouns indicates that factors distinguished in the reference point approach can *in principle* be used to explain both sentence and discourse level anaphora; the results obtained here have confirmed that these same factors *in fact* account for discourse level referential

choice. An advantage of this approach, in my view, is that it establishes a correspondence not only between the level of clauses and the level of discourse, but also between the knowledge underlying (sentential) acceptability judgments, and the processes underlying language usage: the notion salience, as adopted and developed for discourse contexts in chapter 2, is able to account for both coreference judgments at the level of clauses, traditionally associated with linguistic competence, and for the actual referential choices that narrators make in telling stories, typically associated with linguistic performance.

Factors affecting referent salience

The relation between referential form and notions such as salience, accessibility, activation, givenness, prominence, focus, etc., is well known. What is less well known is which characteristics of the context directly *determine* referent salience. This study contributes a detailed characterization of context factors which, individually and in combination, and in different degrees of importance, affect the online salience of referents. The analysis of the various factors reveals that some of the factors affecting referent salience are much more important than others, and that some are rather subtle and only come to the fore if other factors are included in the analysis as well.

If one considers all the analyzed factors, it turns out that both attention-related factors such as perceptual attention and referential distance, and discourse-structural factors such as episode structure and viewpoint, are highly influential in the assignment of referential form. Moreover, the regression analysis indicates that these types of factors cannot be reduced to each other: although distance and structure naturally coincide in the real-time production of narratives, both independently contribute to referent salience, and thereby to referential choice. It is proposed that both types of factor can be explained in terms of referent salience as the underlying mechanism, that is, their influence is mediated through (the construal of) referent salience.

The various context factors, their relation to the notion salience, and their (relative) contribution to referential form, will be described below.

In the maintenance of reference to a single story protagonist, the intervention of a secondary character (an *intervening referent*) increases the tendency that the narrator will repeat the use of proper nouns, upon returning to mention the protagonist. This is also the case for intervening referents that do not correspond with the protagonist in number and gender, i.e. when avoiding ambiguity is not at issue. This is probably due to the intervening referent functioning as local topic, after which the topic status of the protagonist referent is re-established by using a proper noun. It is plausible to assume that the salience associated with (local) topic status is responsible for this result.

Referential form is also significantly related to *clause-internal organization*: When protagonist references occupy *clause-initial position*, they are pronominalized more often than when they do not. It remains to be investigated whether this tendency is related to other, e.g. discourse level factors. The result is

consistent with the general principle that salient, 'old' information is placed earlier in the sentence than non-salient or relatively new information (cf. Lambrecht 1994 inter alia).

Another relevant clause-internal factor is *syntactic function*: protagonist references coded as syntactic subject are pronominalized more often than references in other syntactic functions; in fact, the proportion of proper nouns is consistent with the grammatical relations hierarchy of subject, direct object, indirect object and oblique complement. However, the regression analysis reveals that if other factors are taken into account, a referent's syntactic function no longer significantly contributes to the probability that a narrator will repeat the use of proper nouns. The most plausible explanation seems to be that the relevant discourse level factors, for example intervening referents, cause both the non-subject function *and* the use of proper nouns: in such a case, the secondary character intervenes as clausal subject, causing the protagonist to be coded in another syntactic function; the intervening referent, functioning as local topic, also causes the decrease in referent salience for the protagonist, and consequently, the assignment of proper noun form for the protagonist. Both pronominalization and subject function might be characterized as linguistic means to mark referent salience.

Referential distance turns out to be a crucial factor in the selection of referential form. Narrators tend to repeat proper nouns even when no conceptual factor is at issue, simply as a function of a particular distance between antecedent and anaphor. Pronouns are continued especially when avoiding two proper nouns immediately following each other, as can be observed from the (quadratic) development of proper noun probability after preceding corresponding proper nouns (this is in line with the 'repeated name penalty', Gordon et al. 1999). The distance-based pattern of alternating proper nouns and pronouns is independent from the analysed grammatical and discourse-structural factors, that is, referential distance is an important factor that cannot be simply explained as an epiphenomenon to the tendency to repeat proper nouns after discourse boundaries. Since words are a more accurate measure for this factor than clauses, it might be plausible to assume that the distance-based pattern is related to processing time and assumed concept activation.

Perceptual attention is also related to the fluctuation of concept activation, analysed through the implementation of page breaks in the visual stimuli for the corpus elicitation. The occurrence of page breaks between pages of the visual stimuli, irrespective of narrative content, leads to a slight increase in the proportion of proper nouns used to refer to the protagonist. The analysis presented in chapter 5, however, suggests that the conceptual discourse-structural factors (episode and visual viewpoint, cf. below), involving the *content* of the narrative, are more influential. The results certainly indicate that the assignment of referential form cannot be reduced to a rule based on the flow of attention, without also taking into account the conceptual (content) structure of discourse (contra Tomlin & Pu 1991).

As for the narrative content, the analyses indicate that narrators are more likely to repeat proper nouns after *episode boundaries*. The repetition of proper nouns after episode boundaries is an independent tendency: it is not affected by the *distance* to the preceding corresponding reference; it is also independent from the

form of preceding coreference, i.e. whether the immediately preceding reference is through a proper noun or pronoun. This seems to indicate that this tendency overrides the repeated name constraint mentioned above. What *does* appear to influence the tendency to repeat proper nouns at the onset of a new episode is the strength of the episode shift. More generally, the analysis in terms of the situation model parameters time, location, and the presence or absence of both main and secondary character, indicates that the tendency to repeat proper nouns increases with the number of changed situation model parameters: the stronger the break in episode structure, the more likely a narrator is to use proper nouns. The factor episode structure too can be explained in terms of referent salience: the cognitive effort involved in the production and comprehension of new discourse segments diminishes referent salience, triggering repeated proper nouns. Moreover, it is proposed that the narrator *presents* the referent as non-salient, so as to enforce the interpretation that a new episode begins (cf. Vonk et al. 1992).

Another highly influential discourse-structural factor is shift in *visual viewpoint*: if the viewpoint from which the narrative is described temporarily shifts (mostly to other characters), resumed reference to the protagonist usually takes the form of a proper noun. The shifts implemented in the pictures usually also evoke increased distance between reference to the protagonist and its antecedent reference, and the mention of other intervening characters (situations which often co-occur in spontaneously produced narratives). The regression analysis indicates that when these component factors are accounted for (i.e. disentangled from the 'pure' effect of viewpoint), viewpoint shifts still have an independent effect on the repetition of proper nouns, which suggests that viewpoint might be considered a narrative structural parameter in its own right, at least in its effect on referential form (in addition to the ones distinguished in Zwaan & Radvansky 1998). The factor viewpoint is therefore comparable to the factor episode, although in viewpoint shifts the tendency to repeat proper nouns is reinforced by the usually co-occurring factors of referential distance and intervening referents.

The factor character perspective involves the extent to which a protagonist functions as conceptualizer of the embedding proposition. If a proposition reflects a protagonist perspective, through implicit perspective, the protagonist is pronominalized more often than in cases in which the embedding text is presented in direct narrative[1]. The fact that even a subtle perspective category such as implicit perspective affects pronominalisation is remarkable, since in this category the responsibility for both wording and content of the proposition remains with the narrator (rather than the embedded character). The representation of a character's speech and (here mostly) thought arguably increases the salience of the character referent.

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[1] Another category of character perspective, free indirect discourse, (as distinguished in Sanders 1994) involves more character influence, in that responsibility for the proposition is shared between narrator and character. The question whether the tendency to pronominalize a referent increases with the *extent* of character influence, as reflected in the different perspective categories, could not be analysed here, since cases of free indirect discourse did not occur frequently enough, but this might be an interesting area for further study.

Interaction and relative importance of factors

Although all factors addressed here are significantly related to referential form, the results of particularly the regression analysis indicate that the factors differ in importance and in the way they are related to each other: For example, the two factors intervening reference and non-subject function often co-occur, as do the three factors viewpoint, intervening reference, and increased referential distance. Nevertheless, when their individual contribution to referential form is assessed, remarkable differences arise: it turns out that the latter three factors remain individually significant, which, among other things, indicates that viewpoint is an individual narrative structural factor and indicates that its effect cannot be reduced to the occurrence of referential distance and intervening reference. The factor non-subject function, however, although significantly *related* to repeated proper nouns, does not seem to individually *contribute* to referential choice when the discourse level factors are taken into account.

The factor episode is another case in point: the main opposition between references after episode shifts and references in all other discourse situations does not reveal a significant difference. However, a more detailed analysis reveals that this is caused by the strong effect of several other factors. That is, if episode shifts are compared to all other discourse situations taken together (including for example viewpoint shifts), the distribution of factors is such that they conceal the effect of episode shifts. If other significant factors are all taken into account, episode re-emerges as a significant factor. It can be concluded that episode, although certainly not the only and all-important trigger, is a subtle but important factor in the repeated use of proper nouns.

Further, whereas the increased tendency to repeat proper nouns after an increase in referential distance has been explained as an epiphenomenon of discourse structure, the inclusion of both types of factors in a single analysis reveals that it is not: both referential distance and discourse structure, although they often coincide, individually contribute to referential form.

What emerges from the analysis is a proper noun / pronoun alternation in reference to the narrative protagonist in which two main tendencies can be discerned, both related to referent salience: Narrators take into account fluctuations of (assumed) concept activation, and repeat proper nouns at regular intervals, irrespective of narrative structural factors. This results in a distance-based pattern of proper nouns and pronouns. References after narrative shifts, such as episode and viewpoint boundaries, often coincide with a certain stretch of distance between that reference and the preceding corresponding proper noun, but if they do not, such shifts often lead the narrator to deviate from the distance-based alternation, and to repeat proper nouns. Both the distance-based pattern and the narrative factors can be associated with the basic underlying mechanism of referent salience, although the first might work more 'automatically' than the second.

Referent salience and referent activation

Before proceeding to the theoretical proposal in the next section, let me briefly address the relation between concept activation and referent salience, as the assumed underlying mechanism of referential choice. Linguistic notions such as prominence, salience, accessibility etc. have often been linked to concept activation and memorial status of concepts (e.g. Ariel 1990). Indeed it seems that referent activation is highly influential through referential distance: as argued earlier, words seem to be a more accurate measure for the passing of time, whereas clauses might be a more accurate reflection of content / information units. To be sure, this is a relative rather than absolute distinction. Nevertheless, the fact that intervening words are a more accurate measure for the influence of referential distance than intervening clauses might indicate that the factor referential distance exerts its influence through processing time, hence through a decrease in concept activation, between consecutive references.

I propose that the notions activation and salience are not exactly the same: the former is a purely attentional notion, whereas the latter is a communicative notion. For the narrator, the concept to be expressed is *always* highly active by the time it is ready to be verbalized. In cases in which concept activation is the crucial factor, the form therefore reflects *assumed* activation for the hearer/reader. The narrator, however, has no *direct* way of knowing what a referent's activation level for the reader is at a particular point. An interesting hypothesis might be that, in assigning referential form corresponding to assumed referent activation, the narrator partly relies on her *own* attention processes, and fluctuating concept activation, throughout the course of text production (cf. Schilperoord 1996, chapter 5). Whether this is indeed the case, is an empirical question[2], which I leave for further research.

The extended reference point model

In line with the general distinction between sentence and discourse domains, sentence and discourse anaphora are traditionally analysed as pertaining to two different domains of linguistic analysis, i.e. syntax and pragmatics respectively. The different treatment of sentence and discourse competence can be illustrated by the following quote from Jackendoff (1997: 3):

> I am sure that the construction of discourse and narrative involves a cognitive competence that must interact to some degree with the competence for constructing and comprehending individual sentences. My assumption, perhaps unwarranted, is that the two competences can be treated as relatively independent.

I propose that, in the domain of anaphora, the independent treatment of sentence and discourse phenomena is indeed unwarranted, and misses insightful generalizations

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[2] This issue might be investigated by analysing referential patterns in spoken narratives relative to the pause patterns preceding different types of referential expressions.

about the nature and use of referential categories, particularly proper noun and pronoun.

Adopting the semantic account of sentential anaphora constraints presented in Van Hoek (1997), and given the applicability of the same type of factors to the level of discourse (although not equally important at both levels), we can conclude that sentence and discourse anaphora can be accounted for in a similar way.

The fact that sentence and discourse anaphora can be described with the same principles, based on the salience reflected in nominal categories, does not mean that all types of relevant factors are equally important at both levels. Van Hoek proposes that conceptual connectivity is more influential than linear order, and her analysis of clause-level constraints on corresponding reference confirms that this is indeed the case. The results found here suggest that (if indeed distance and linear order are comparable, in that both are linear factors), at the discourse level the weight of the factors linear order/distance versus conceptual connectivity patterns differently: referential distance seems at least as influential as discourse level conceptual connectivity, i.e. episodic structure. This might be explained as follows:

First, conceptual connectivity is a continuum, and its effect is weaker at the discourse level. Discourse patterns are more flexible than sentential patterns, which allows the narrator to deviate from the tendency to repeat proper nouns after breaks in conceptual connectivity. Second, the distance between corresponding references can be a stretch of discourse of any length: the level of discourse allows a linear factor such as referential distance to take effect, an effect which might not be discernable at the level of isolated sentences.

My theoretical proposal about reference maintenance is as follows: the extended reference point model provides an adequate theoretical description of referential choice in the maintenance of reference to narrative characters, be it that a detailed characterization of narrative context is needed to account for referential patterns. The *scope* of the extended reference point model proposed here is both wide and narrow: on the one hand, it encompasses both sentence and discourse anaphora; on the other, it is claimed to be restricted to cases of established topic referents that have an *identity* relation to previously mentioned referents. The coding of other types of referent, and of other types of anaphoric links, involving the production of e.g. indefinites, demonstratives and modified NPs, in my view, is subject to different principles.

In topic maintenance, the discourse level reference point model accounts for referential choice, in the following way: Narrative characters function as reference points for the interpretation of their embedding context, here termed *dominion*. Referential dominions represent the extent of conceptualised narrative context in which a given entity retains its salience, and remains pronominalized. In the course of discourse production, both attentional (linear distance) factors and narrative (conceptual connectivity) factors at times diminish the extent to which a character referent continues to function as the central reference point for the surrounding context. In such cases, the salience of the referent diminishes and full nominal reference is repeated, which re-establishes the character as reference point.

Consistent with the view that topics serve as 'anchors' or reference points for the interpretation of the surrounding context, the organization of referential dominions might be one of the ways to package information in the discourse.

The linguistic categories *par excellence* for expressing this organization of reference points and dominions in narrative discourse are proper nouns and pronouns. This is due to the characteristic *salience* which is part of the conceptual structure of these categories. A pronoun incorporates the feature high salience, and a proper noun incorporates the feature low salience. A proper noun is further characterized by an indexical feature: it has "an indexical feature in its associated concept" (Jackendoff 2002: 318), uniquely identifying a particular referent (within a certain domain, e.g. restricted to a particular story). A pronoun of course does not in itself contain such an indexical feature. Rather, the indexical feature associated with a pronoun, which establishes the correspondence with a topical referent, is constructed *online*.

In selecting referential form for narrative characters, the speaker/writer tailors the referring expression to (assumed) referent salience within the immediately embedding context. The *salience* ascribed to the referent representation determines the use of either a proper noun or a pronoun. *Pronouns* are used when the intended referent is highly salient within the current context. Due to the high global salience of protagonists throughout a story, it is suggested that pronouns are the default choice for topic characters. This is in line with the principle of *least effort* (Zipf 1949), and also with Grice's (1975) maxims of *quantity*. *Proper nouns* are repeated when referent salience decreases to the extent that the referent no longer functions as reference point within the immediately embedding context, or when, for communicative purposes, the referent is to be presented as such. This functional characterization is consistent with the idea that narrators might exploit the salience expressed by nominal categories in order to properly indicate the intended referent, and to guide the reader through the structure of the narrative.

7.2 Epilogue

The empirical research presented here provides us with a fairly accurate picture of the various discourse situations in which a narrator uses either proper nouns or pronouns in reference to her story protagonist. Nevertheless, the analysis of the data necessarily leaves two questions largely unanswered: What are the communicative *functions* that drive the narrators' referential choices? And which are the specific *production rules* by which a narrator selects a referential form?

Communicative functions of referential expressions

Although all the factors addressed above are significantly related to referential choice, none of these factors *invariably* trigger the use of proper nouns. In other words, all the relevant factors involve tendencies, not rules. This implies that the

selection of referential choice does not involve deterministic rules, but rather that the selection of referential form is indeed a *choice* or, a *strategy*. The observation that all factors represent tendencies, not rules, certainly calls for an explanation. Let us try and figure out what this might mean for the communicative function or intention with which narrators refer to characters. To be sure, an observed system of hard-and-fast rules for referential assignment does not rule out a communicative function. The repetition of proper nouns to avoid causing ambiguity, a factor not addressed here, might represent such a hard-and-fast rule, and has a clear communicative function associated with it: the proper identification of referents. When no explicit reference is strictly necessary for proper (unambiguous) identification (as in the references studied here), signalling the discourse structure is another communicative function that is plausibly at issue.

My tentative proposal is that the two main tendencies that emerge from the data, namely, repeated proper nouns as a function of distance and intervening reference, and repeated proper nouns after discourse boundaries, are driven by the communicative functions of identification and discourse-marking respectively.

What these two tendencies might have in common is that they are both part of what Langacker terms "attention framing" (Langacker 2001, cf. also chapter 2), i.e. guiding the hearer / reader's attention: referential distance exerts its influence through the assumed decrease in concept activation for the reader; discourse structure, while possibly also affecting concept activation, is more plausibly interpreted as a factor which exerts its influence due to the narrator's communicative need to signal discourse boundaries: when the narrator uses a repeated proper noun, the referent is presented as not being salient, so as to impose the interpretation that the referent belongs to a new part of the discourse.

Production rules for proper nouns and pronouns

The second unresolved issue is the production process itself. Although the research sheds light on the factors influencing online referential choice, in no way does it provide a direct window into the processing mechanisms underlying the referential choices. Of course there must be some cognitive *procedure* by which the mind decides on a particular form.

The question that remains, therefore, is how the multitude of factors that prove to be influential, find their way into the production system, and how they are converted into either proper nouns and pronouns. One might imagine that each of the relevant factors has a production rule of its own: "if there is an intervening referent, repeat proper noun"; "if there is an (strong) episode transition, repeat proper noun". This is not really a viable option: the variety and the relatedness of factors as established in chapters 5 and 6 necessitates a multitude of production rules, and a hierarchy of preferences and cancellations. A simpler set of production rules would be preferable.

I already argued above that, although we need a detailed characterization of context to predict it, referent *salience* is the underlying mechanism which determines referential choice. An improvement is therefore the postulation of

production rules involving only referent salience: A procedure specific to the production of proper nouns, on such an approach, might be something like: "if the referent is not assumed to be salient, or is to be presented as not salient, repeat proper noun". Such a rule could be implemented within a production system such as the one described in Levelt (1989: 145-9), comprising a set of condition / action pairs at the levels of conceptualizer and formulator. At the conceptualizer level, context factors such as the ones described here together determine the level of salience associated with an intended referent. At the level of the formulator, a single production rule transforms a certain threshold value for referent salience into a proper noun or pronoun. Note that such an approach requires a procedure that is *specific to referential expressions*.

Alternatively, one might hypothesize that the necessary procedure is more general than the one proposed above, i.e., not specific to discourse referents. Both proper nouns and pronouns, on such a view, are characterized as lexical items. This is in line with recent work by Jackendoff (2002, 2007), who proposes that the only *procedure* consists in retrieving material from the lexicon, be it lexical items such as *tree*, function words such as *she*, or clitics such as plural *–s*:

> [W]ords, regular affixes, idioms, constructions, and ordinary phrase structure rules [...] can all be expressed in a common formalism, namely as pieces of structure stored in long-term memory. The lexicon is not a separate component of grammar from the rules that assemble sentences. Rather, what have traditionally been distinguished as "words" and "rules" are simply different sorts of stored structure. [...] The "generation" of novel sentences is accomplished across the board by the operation of clipping together pieces of stored structure [...].
>
> (Jackendoff 2007: 11)

On such a view, both proper nouns and pronouns are lexical items, and no reference-specific procedure is needed to account for their production. Within Jackendoff's 'triple' characterization of lexical items consisting of a conceptual, syntactic, and phonological structure, a lexical characterization of proper nouns and pronouns might be described as follows:

Lexical items such as the proper noun *Annemarie* might have the following characteristics: its conceptual structure consists in (i) designating an indexical feature in some domain, and (ii) indicating a low degree of salience in the current discourse domain; (iii) descriptive features of the entity it designates (encyclopedic knowledge). Its syntactic structure includes the characteristics NP, gender, number and person. Its phonological structure consists of the string 'Annemarie'.

Pronouns share the syntactic structure of proper nouns, in that they belong to the syntactic category noun phrase, and specify number, gender and person. Pronouns such as *ze* ('she') have a 'skeletal' conceptual structure comprising characteristics such as [animate] and [female]. Pronouns thereby potentially share a number of conceptual features with proper nouns such as *Annemarie*, which makes

anaphoric correspondence possible. Contrary to proper nouns, pronouns further contain the conceptual characteristic of high salience. Another difference between proper nouns and pronouns is that the latter do *not* designate a unique entity. So they do not contain a stored indexical feature in the lexicon. The specific indexical feature of a pronoun in the context of actual utterances is established *online* through marking the most salient entity within the current context. The (anaphoric) link between an entity (usually but not necessarily an antecedent full nominal) and a corresponding pronoun in a particular context is a conceptual (i.e. not necessarily linguistic) relation of identity[3].

Such a lexical characterization of proper nouns and pronouns might simplify the rules needed to account for their production in narrative discourse. That is, the coding of reference maintenance might be characterized as a matter of retrieving material from the lexicon. In language production, specifically, in consecutive reference to narrative characters, proper nouns and pronouns compete for selection. Although a proper noun has more conceptual features in common with the intended referent, a pronoun is selected if the intended referent is the most salient element in the immediately embedding context (dominion), due to general pragmatic principles, i.e. consistent with the law of least effort (Zipf 1949), and Grice's (1975) maxim of quantity.

Whether the production rule(s) for the selection of referential forms involves the general procedure for retrieving lexical items from long-term memory, or a specialized procedure for referential expressions, is an empirical question that remains to be investigated.

[3] The conceptual nature of the correspondence between a pronoun and the entity it refers to is testified in discourse-initial pronouns as in the *'we got 'em'* example in chapter 2, cf. also Ariel 1988 (although she does not treat referential categories as lexical items).

Appendix to chapter 4
Page breaks, episode shifts, and viewpoint shifts in four conditions

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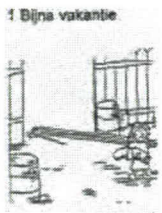

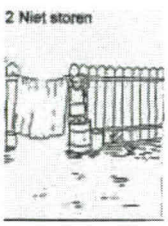

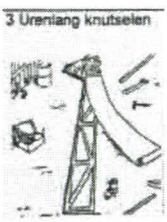

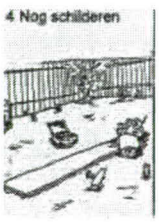

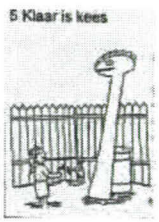

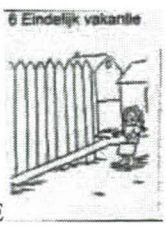

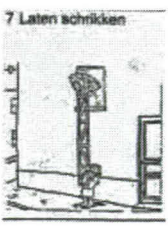

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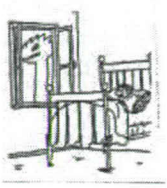
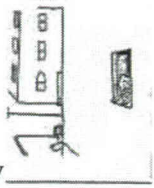
[1] V = Viewpoint shift picture; E = Episode shift picture

8 ???

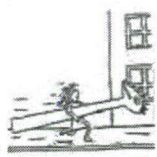


9 Niemand



V

10 Wegwezen



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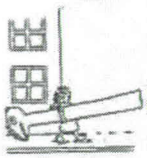
11 Enkele dagen later



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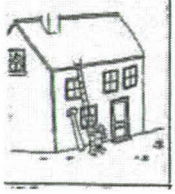
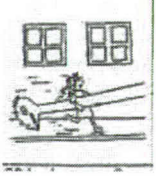
12 Een nieuwe stunt



13 Schoorsteen

14 Veel bekijks

15 Snel weer weg



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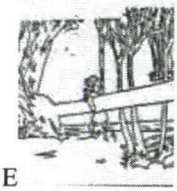
16 Weer op pad



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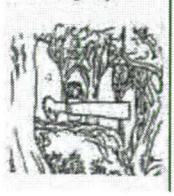
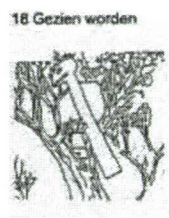
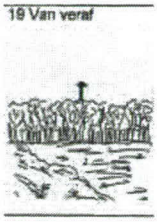
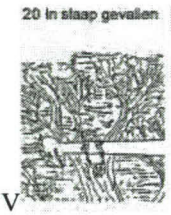
17 De weg kwijt









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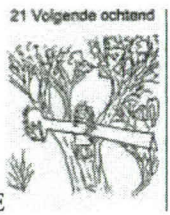

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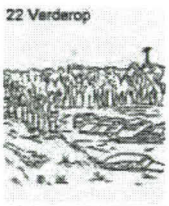

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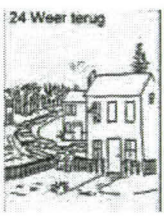
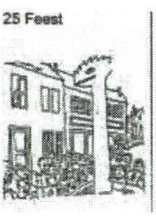
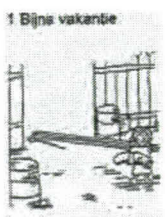
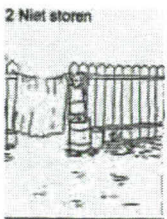


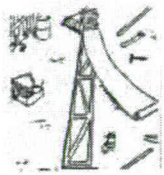


CONDITION 2 (EVEN, TWO PICTURES PER PAGE)

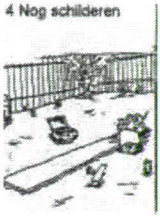




3 Urenlang knutselen

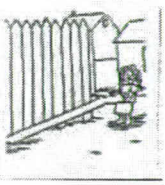


4 Nog schilderen



5 Klaar is kees

6 Eindelijk vakantie



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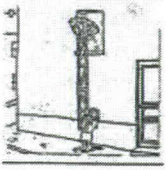
7 Laten schrikken



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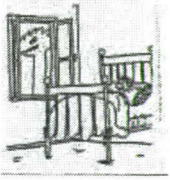

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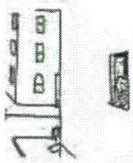
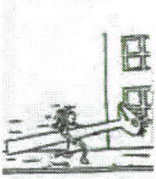


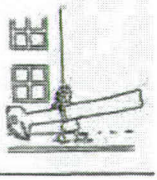
V

10 Wegwezen



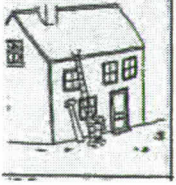
V

11 Enkele dagen later



E

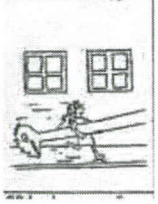
12 Een nieuwe stunt



13 Schoorsteen

14 Veel bekijks

15 Snel weer weg



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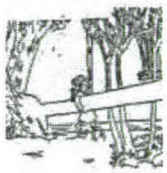

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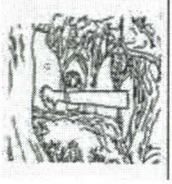
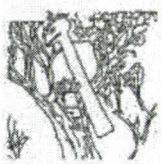
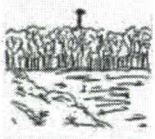


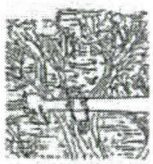
18 Gezien worden



19 Van veraf



20 In slaap gevallen



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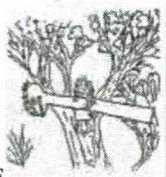
21 Volgende ochtend



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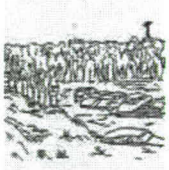
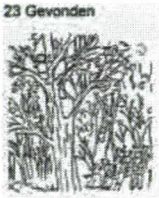
22 Verderop



23 Gevonden



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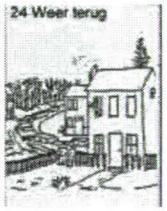
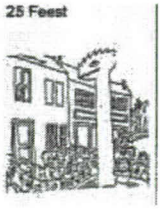
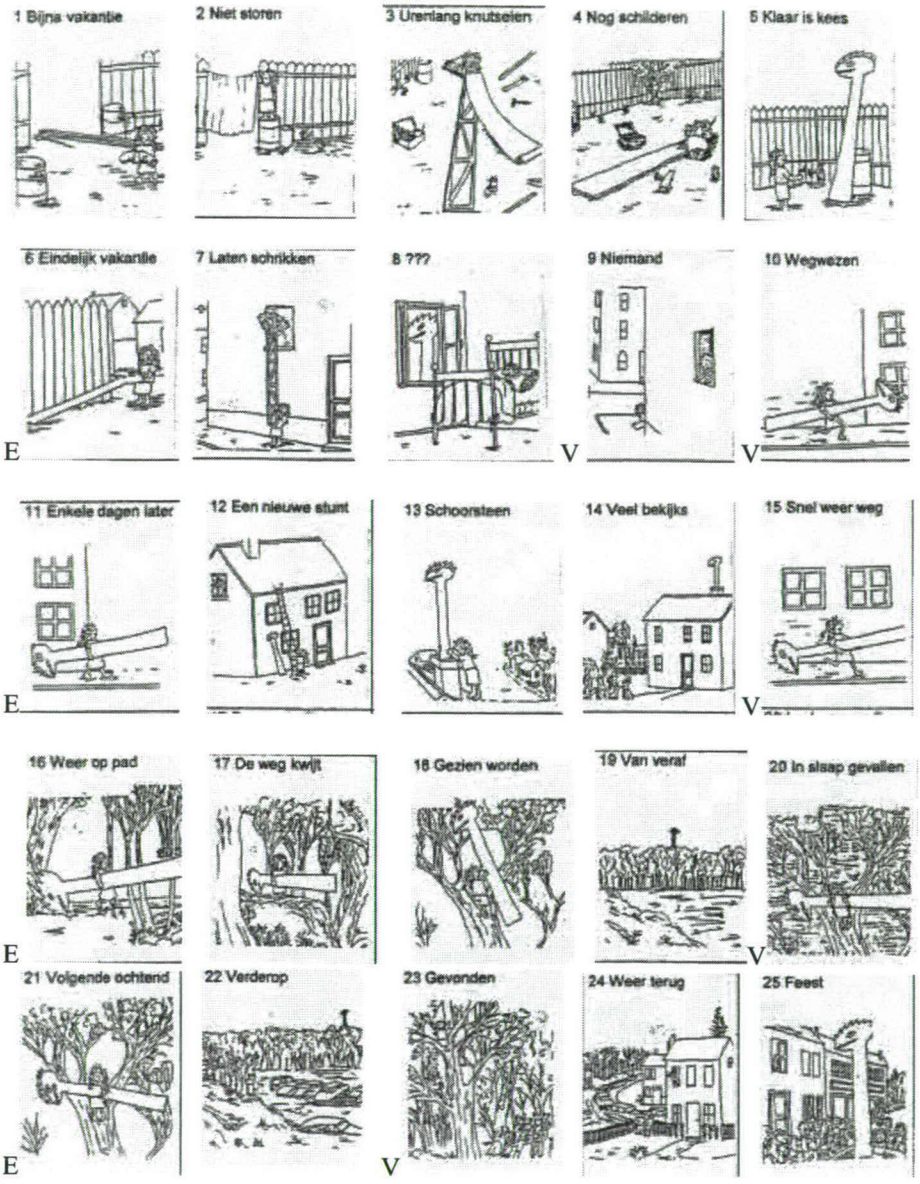
24 Weer terug



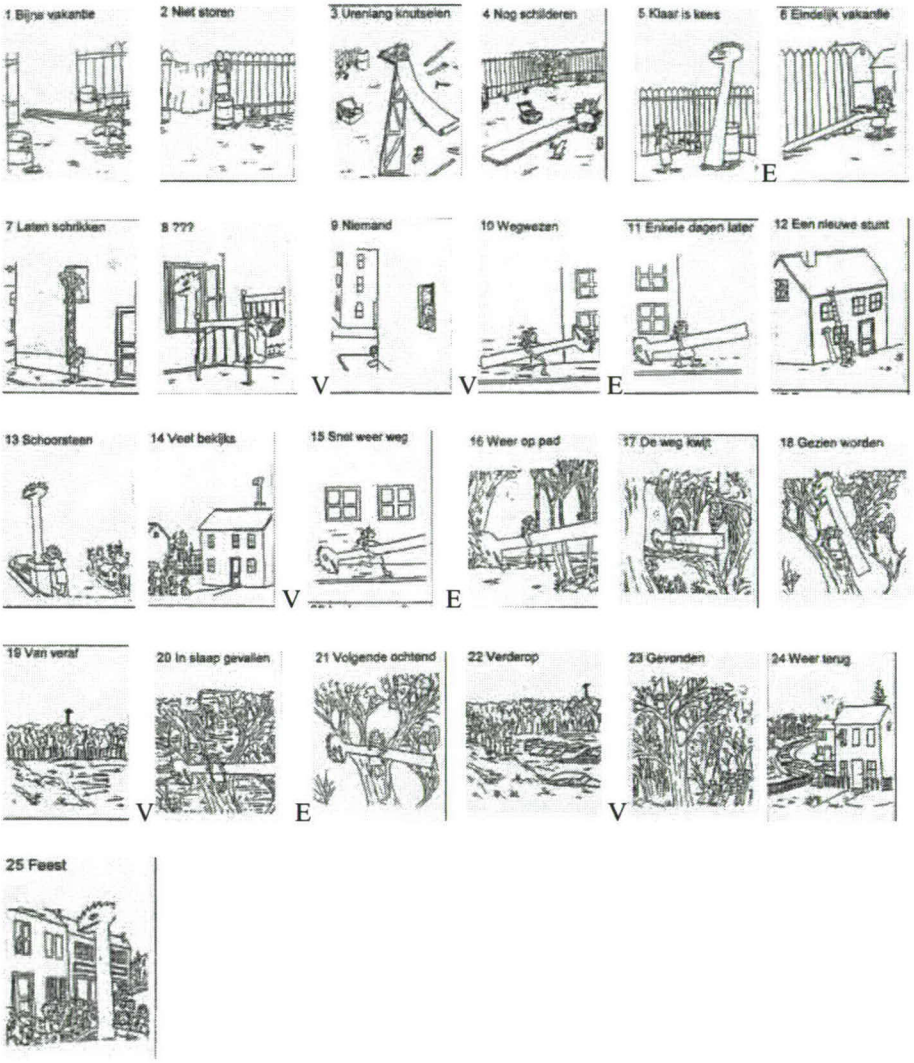
25 Feest



CONDITION 3 (FIVE PICTURES PER PAGE)



CONDITION 4 (SIX PICTURES PER PAGE)



Appendix to chapter 6 - 1
From logits to proportions

The regression analysis is conducted using *logits*, which is a measure for the weight of a parameter estimate. The estimated probability of a certain value for the dependent variable can be calculated on the basis of these logits:
The estimated probability for the constant is based on the parameter estimate for the constant in logits, which can be transformed into a probability score using the formula

$$\frac{1}{1+e^{-x}}$$

The estimated probability for a particular factor or combination of factors is calculated by adding up the parameter estimates in logits for both the constant and the relevant factor(s). This yields a logit value which is then again transformed into a probability score, using the same formula. This method is illustrated below:

Table 1.
Calculation of estimated proportions of proper nouns for regression model (table 7 in chapter 6), including the constant and factors episode and viewpoint (condition 3, Nijk=1726)

	Parameter estimate in logits	From logits to proportions:	Estimated Proportion Proper Nouns
		$1/\ 1+e^{-(-1.252)} =$	.22
		$1/1+(2{,}71828^{1.252}) =$	
Constant	-1.252	$1/\ (1+\ 3{,}497) = 0.22$	
Episode	0.837	$1/1+e^{-(-1.252+0.837)} =$	.40
Viewpoint	1.668	$1/1+e^{-(-1.252+1.668)} =$	.60

Appendix to chapter 6 - 2
Confidence intervals

Table 1
Basic model (1), word-per-word (condition 3, n=1726), estimated proportions within 67% confidence intervals for level picture, participant and both (mean = .32).

Confidence intervals	67%	
	Minimum	Maximum
Participants	.26	.39
Pictures	.22	.46
Both	.20	.48

Table 2
Mean estimated proportions based on model (5), for constant, episode and viewpoint, as well as minimum and maximum estimated proportions within 67% confidence intervals for level **participant** and **picture**.

Confidence intervals		67% participant		67% picture	
	Mean	Minimum	Maximum	Minimum	Maximum
Constant	.22	.17	.29	.12	.36
Episode	.40	.32	.48	.28	.57
Viewpoint	.60	.52	.68	.43	.75

Table 3
Mean estimated proportions based on model (6), for constant, and intervening reference, as well as minimum and maximum estimated proportions within 67% confidence intervals for level **participant** and **picture**.

Confidence intervals	67% participant			67% picture	
	Mean	Minimum	Maximum	Minimum	Maximum
Constant	.25	.19	.33	.16	.38
Intervening reference	.68	.59	.76	.53	.79

Table 4
Mean estimated proportions based on model (7), for constant, intervening reference, episode and viewpoint, as well as minimum and maximum estimated proportions within 67% confidence intervals for level **participant** and **picture**.

Confidence intervals	67% participant			67% picture	
	Mean	Minimum	Maximum	Minimum	Maximum
Constant	.18	.13	.25	.09	.33
Intervening reference	.54	.44	.64	.35	.72
Episode	.40	.30	.50	.23	.59
Viewpoint	.42	.33	.52	.25	.61

Table 5
Mean estimated proportions based on model (8), for constant, and non-subject function, as well as minimum and maximum estimated proportions within 67% confidence intervals for level **participant** and **picture**.

Confidence intervals		67% participant		67% picture	
	Mean	Minimum	Maximum	Minimum	Maximum
Constant	.30	.24	.37	.20	.43
Non-subject	.53	.46	.61	.40	.67

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Eigennamen en Pronomina

De productie van referentiële uitdrukkingen in narratieve teksten

Introductie

In gesproken en geschreven verhalen gebruiken vertellers verschillende manieren om naar personages te verwijzen. Ook wanneer steeds naar hetzelfde personage wordt verwezen, kan een verteller daar verschillende uitdrukkingen voor gebruiken: Het volgende fragment uit de roman *Au Pair* van W.F. Hermans laat zien dat er verschillende typen *referentiële uitdrukking* gebruikt worden om naar eenzelfde personage te verwijzen:

> (1) **Paulina** besloot al voor ze naar de hoogste klas overging, dat **zij** Frans en Kunstgeschiedenis wilde gaan studeren in Parijs.
>
> **Ze** was in Vlissingen geboren en had daar ook **haar** hele jeugd gewoond, omdat **haar** vader in die stad een tamelijk hoge functie in het gemeentebestuur bekleedde.
>
> **Haar** ouders waren niet echt vermogend, toch bezaten ze sedert lang een vacantiehuisje in Frankrijk. Van jons af aan bracht **Paulina** daar elke zomer door met **haar** vader, **haar** moeder en **haar** vier jaar jongere broertje. Zo was **zij** in de gelegenheid gekomen heel behoorlijk Frans te leren spreken. (WFH.AP: 5)

In dit fragment wordt steeds naar dezelfde hoofdpersoon, Paulina, verwezen, maar de verteller gebruikt daarvoor afwiselend *eigennamen* zoals *Paulina*, en *pronomina* (persoonlijk voornaamwoorden) zoals *zij* en *ze*. Er is dus geen één-op-één relatie tussen betekenis enerzijds, en talige vorm anderzijds.

Wanneer alle eigennamen vervangen worden door pronomina, levert dit een onduidelijke tekst op. Dit geldt evenzeer voor het omgekeerde: wanneer alle pronomina vervangen worden door eigennamen, levert dit een onleesbare tekst op. Dit onderzoek gaat na welke factoren en regels ten grondslag liggen aan het afwisselend gebruik van eigennamen en pronomina in narratieve teksten, en beoogt hier een cognitief plausibele verklaring voor te bieden.

De prominentie van mentale referenten

Hoofdstuk 2 geeft de theoretische achtergrond voor het empirische onderzoek.

Allereerst wordt een karakterisering gegeven van *referenten* (dat waar in een tekst naar verwezen wordt) als *mentale representaties* in plaats van als dingen of personen 'in de wereld'. Zo laat Jackendoff (2002) zien dat verschillende verwijzingen, - bijvoorbeeld muzikale composities als 'de vijfde symphonie van Mahler', fictieve personages als 'Sherlock Holmes', geografische verwijzingen zoals 'Wyoming', en uitdrukkingen als 'de waarde van mijn horloge' - niet zozeer verwijzen naar

objectief aanwijsbare dingen in de werkelijkheid, maar veeleer naar mentale representaties.

Vervolgens behandelt het hoofdstuk de talige vorm die gebruikt wordt om naar die mentale representaties, de *referenten* (bijvoorbeeld personages) te verwijzen. Centraal staat het idee dat de *prominentie* of *mentale activatie* van referenten een belangrijke rol speelt in de keuze voor een specifieke referentiële uitdrukking: Dit heeft te maken met het gegeven dat mensen maar een beperkt aantal concepten tegelijkertijd mentaal geactiveerd kunnen houden. Een spreker of schrijver houdt rekening met de (ingeschatte) mentale beschikbaarheid of *prominentie* van een referent voor de lezer of luisteraar, en past de talige vorm daarop aan. De verschillende typen referentiële uitdrukking geven verschillende graden van prominentie aan: Eigennamen worden gebruikt wanneer een beoogde referent een relatief lage prominentie heeft binnen de context; pronomina worden juist gebruikt wanneer de beoogde referent een hoge prominentie heeft binnen die context, bijvoorbeeld doordat de referent even tevoren al genoemd is.

Voor een verantwoording van de manier waarop vertellers naar personages verwijzen, wordt een theoretisch model van anaforische verwijzingen *binnen* de zin, Van Hoek's zgn. *reference point model of anaphora* (1997), uitgebreid naar het niveau van narratieve tekst. Het basisprincipe van dit uitgebreide model luidt als volgt: tekstuele referenten functioneren als *conceptuele referentiepunten* voor de interpretatie van de omringende geconceptualiseerde context. Deze geconceptualiseerde context wordt een *referentiëel domein* genoemd, en de reikwijdte van zo'n domein bepaalt of een referent wel of niet (opnieuw) expliciet wordt aangeduid door middel van een volledige NP zoals een eigennaam. Factoren die de organisatie van referentiepunten en domeinen kunnen beïnvloeden zijn perspectief, lineaire volgorde van referenten, en de conceptuele connectiviteit tussen verschillende gedeeltes van de zin of tekst waarin de corresponderende verwijzingen staan.

Tekstfactoren zoals bijvoorbeeld overgangen tussen opeenvolgende episodes kunnen een referentiëel domein afsluiten en een nieuw domein openen (waarin dezelfde referent wederom als referentiepunt kan functioneren), en daarmee het herhaalde gebruik van een eigennaam oproepen. Een voorbeeld is het volgende fragment uit *Au Pair* van W.F. Hermans:

> (2) **Ze** [Paulina] moest zo snel mogelijk een slot op de deur laten maken, maar morgen was het zondag. Ik had beter moeten nadenken, zei **ze** bij zichzelf. Het geld dat **ze** van huis had meegebracht, zou immers wel voldoende zijn geweest, om nog twee nachten in het hotelletje te slapen; meer dan voldoende. Maar, aan de andere kant, waar was **ze** bang voor? Die mensen koesterden misschien wel helemaal geen plannen **haar** te molesteren of te bestelen?
>
> Iemand had een geluidsinstallatie aangezet en jankende Arabische muziek begon te weerklinken.
>
> **Paulina** schoof het gordijn dicht, kleedde zich uit, waste zich een beetje, trok **haar** nachthemd aan, poetste **haar** tanden. (WFH.AP: 28)

In de eerste alinea van dit fragment wordt doorlopend met pronomina naar de hoofdpersoon Paulina verwezen. Een mogelijke verklaring zou het weergegeven perspectief van de hoofdpersoon kunnen zijn: wanneer een passage de gedachtes van het personage zelf weergeeft, verhoogt dit de prominentie van zo'n referent, waardoor een verteller voor pronomina kiest.

De herhaling van de eigennaam in de derde alinea kan op verschillende manieren verklaard worden: de conceptuele breuk in het verhaal, - d.w.z. de overgang van de innerlijke belevingswereld van Paulina naar de beschrijving van handelingen zoals tandenpoetsen – kan het referentiële domein afsluiten en een herhaling van de eigennaam oproepen. Een andere mogelijke oorzaak is de toegenomen referentiële afstand, d.w.z. de afstand tussen antecedent en anafoor: er is een korte tussenliggende alinea waarin de hoofdpersoon helemaal niet genoemd wordt, waardoor de prominentie kan zijn 'weggezakt', hetgeen ook een referentiëel domein kan afsluiten en een eigennaam oproepen.

Vanwege het feit dat meerdere factoren tegelijkertijd een rol kunnen spelen bij de toekenning van een bepaald type expressie, is een kwantitatieve analyse geboden om de individuele bijdrage van de verschillende factoren te kunnen beoordelen.

Factoren in het gebruik van eigennamen en pronomina

In hoofdstuk 3 wordt een overzicht gegeven van de verschillende factoren die een rol zouden kunnen spelen bij de keuze voor een eigennaam of pronomen, uitgaande van het theoretisch model zoals dat in hoofdstuk 2 geschetst is. De verschillende factoren die in hoofdstukken 5 en 6 kwantitatief geanalyseerd worden zijn als volgt:

- *interveniërende referenten*: de 'tussenkomst' van een ander personage dan de hoofdpersoon.
- *syntactische functie:* de grammaticale functie die de verwijzing naar de hoofdpersoon binnen de zin inneemt (onderwerp, lijdend voorwerp, etc.).
- *lineaire positie:* de plaats van de referent binnen de zin, bijvoorbeeld vooraan de zin of juist achteraan.
- *referentiële afstand:* de afstand (in tussenliggende woorden, clauses) tussen de verwijzing naar een personage, en de voorafgaande verwijzing naar datzelfde personage.
- *perceptuele attentie*: het voorkomen van 'externe' perceptuele attentie shifts, die niet met de grammaticale of inhoudelijke structuur te maken hebben.
- *episode structuur:* de overgang naar een volgende episode, bijvoorbeeld door veranderingen in tijd en/of plaats.
- *visueel gezichtspunt:* een overgang in het visuele perspectief van waaruit het verhaal wordt verteld.
- *personage perspectief*: de mate waarin een hoofdpersoon *zelf* wordt opgevoerd als 'conceptualiseerder' van de inhoud van de zin waarin de verwijzing staat.

Tot slot presenteert hoofdstuk 3 een hypothese over de mogelijk discourse-structurerende functie van eigennamen (Vonk et al. 1992): Het gebruik van een eigennaam na een episode overgang kan, naast de primaire identificerende functie, ook de communicatieve functie hebben dat het de structuur van het verhaal kan *markeren*.

Het samenstellen van een corpus

Om een goed beeld te krijgen van de referentiële patronen die zich bij verwijzingen naar personages voordoen, heb ik een corpus van narratieve teksten samengesteld, op basis van visuele stimuli. De methodologische verantwoording voor deze verzameling van productie data wordt gepresenteerd in hoofdstuk 4.

Aan een grote groep proefpersonen werd gevraagd een verhaal te schrijven op basis van visuele stimuli - een serie van 25 plaatjes, waarin een verhaal wordt weergegeven over een klein meisje en haar avonturen tijdens de vakantie. Dit stimulus materiaal bevat drie geïmplementeerde onafhankelijke variabelen, die invloed zouden kunnen hebben op de keuze van een verteller op een bepaald type referentiële uitdrukking: episode overgangen en gezichtspunt overgangen als binnen proefpersoon factoren, en pagina overgangen (het aantal plaatjes per pagina), de perceptuele attentie factor, als tussen proefpersoon factor.

Aan de proefpersonen werd gevraagd om een verhaal te schrijven, *tijdens* het kijken naar de plaatjes. Op deze manier ontstond een *online* corpus van 282 vergelijkbare geschreven Nederlandse narratieve teksten.

Frequentie analyse van het corpus

Het samengestelde corpus is op twee manieren geanalyseerd, namelijk door middel van een frequentie analyse en door middel van een regressie analyse. Allereerst wordt nu de frequentie analyse, gepresenteerd in hoofdstuk 5, besproken.

Na een karakterisering van het corpus, waarin de validiteit van het corpus voor de onderzoekstaak wordt bevestigd, geeft hoofdstuk 5 een frequentie analyse van de verschillende factoren. Deze analyse geeft antwoord op de vraag of de grammaticale, conceptuele en discourse-structurele factoren significant gerelateerd zijn aan de keuze voor een bepaald type referentiële uitdrukking, met name de keuze tussen het gebruik van een pronomen of het herhalen van de eigennaam.

Allereerst wordt aangetoond dat er een significante relatie bestaat tussen referentiële vorm en de clause-interne factoren syntactische functie en lineaire positie. De proportie eigennamen is in overeenstemming met de hiërarchie van grammaticale relaties subject, direct object, indirect object en oblique complement (Keenan & Comrie 1977). Daarnaast is de proportie eigennamen in gevallen waarin de referent een clause-initiële positie inneemt (vooraan in de zin staat), lager dan in gevallen waarin dat niet zo is.

Verder blijkt een significante relatie te bestaan tussen referentiële vorm (eigennaam of pronomen) en de discourse-structurele factoren die als onafhankelijke variabelen verwerkt zijn in de visuele stimuli, te weten pagina overgangen, episode

overgangen, en gezichtspunt overgangen. Geconcludeerd kan worden dat vertellers geneigd zijn eigennamen te herhalen na breuken in de structuur van een tekst..

De neiging eigennamen te herhalen na episode overgangen wordt *niet* beïnvloed door factoren als lineaire *afstand* tot de antecedent, of door de *vorm* van de antecedent. Deze bevinding onderstreept dat de herhaling van eigennamen na episode overgangen een vrij robuuste tendens is.

Het hoofdstuk behandelt ook de vraag of herhaalde eigennamen na episode overgangen een tekststructurerende functie kunnen hebben, naast hun primaire identificerende functie. Deze analyse kan daar echter geen empirisch uitsluitsel over bieden.

Hoofdstuk 5 biedt ook een *posthoc* analyse van de relatie tussen referentiële vorm en tekststructuur in termen van de *situatiemodel dimensies* van Zwaan & Radvansky (1998). De posthoc analyse gaat uit van de dimensies tijd, plaats en personage, zoals weergegeven in de plaatjes. Uit de resultaten blijkt dat hoe meer situatie dimensies veranderen van plaatje tot plaatje, hoe groter de neiging voor vertellers om de eigennaam te herhalen. Deze bevinding biedt steun voor de gedachte dat conceptuele connectiviteit gezien moet worden als een continuum, zeker in het effect op referentiële vorm.

Tenslotte toetst het hoofdstuk de relatie tussen referentiële vorm en personageperspectief. Deze factor betreft de mate waarin de protagonist *zelf* door de verteller opgevoerd wordt als conceptualiseerder van de propositionele inhoud van een zin, bijvoorbeeld door middel van perceptie- en cognitiewerkwoorden. Uit de analyse blijkt dat verwijzingen in dit soort 'geperspectiveerde' clauses vaker gepronominaliseerd worden dan verwijzingen in andere clauses. Ook na episode overgangen is de neiging om eigennamen te herhalen minder groot wanneer de nieuwe episode met een geperspectiveerde clause geïntroduceerd wordt, dan wanneer dit niet zo is.

De factoren die in hoofdstuk 5 geanalyseerd worden – syntactische functie, lineaire positie, episode overgangen, perceptuele attentie (door pagina overgangen), gezichtspunt overgangen, en personage perspectief – blijken allemaal significant gerelateerd te zijn aan referentiële vorm. Geconcludeerd kan worden dat de resultaten van de frequentie analyse consistent zijn met de hypotheses uit hoofdstuk 3, en daarmee ook steun bieden aan het tekstuele referentiepunt model uit hoofdstuk 2.

Hoewel de frequentie analyse een aardig beeld geeft van het voorkomen van ofwel eigennamen ofwel pronomina in verschillende contexten binnen het verhaal, geeft het geen informatie over de relatieve importantie van de verschillende factoren, of over de manier waarop de verschillende factoren aan elkaar gerelateerd zijn. Om die reden wordt in hoofdstuk 6 de regressie analyse gerapporteerd.

Regressie analyse van het corpus

Hoofdstuk 6 geeft een logistische regressie analyse van een deel van het verzamelde corpus, door middel van *multi-level modeling* (Quené & van den Bergh 2003). Deze analyse beoogt een schatting te geven van de *waarschijnlijkheid* dat een verteller, in verwijzingen naar de hoofdpersoon, een eigennaam (i.p.v. een pronomen) herhaalt, gegeven alle relevante factoren op een bepaald moment in de tekst. De analyse

'ontwart' ook een aantal factoren die aan elkaar gerelateerd zijn en vaak tegelijkertijd voorkomen. De factoren die in dit hoofdstuk worden geanalyseerd zijn referentiële afstand (in woorden en clauses), episode overgangen, gezichtspunt overgangen, intervenïerende referenten en syntactische functie.

Het hoofdstuk presenteert een aantal regressiemodellen, die de invloed weergeven van individuele factoren en combinaties van factoren. De modellen geven van iedere factor het *gewicht* voor de geschatte waarschijnlijkheid van een herhaalde eigennaam, d.w.z., de mate waarin de factor bijdraagt aan de waarschijnlijkheid dat de verteller een eigennaam zal herhalen.

Het eerste model is gebaseerd op de continue factor afstand. Referentiële afstand in woorden draagt significant bij aan de geschatte waarschijnlijkheid van eigennamen: de kans op het gebruik van eigennamen stijgt onmiddellijk na een voorafgaande verwijzing; echter, wanneer de voorafgaande verwijzing een eigennaam is, neemt die kans eerst af, om vervolgens weer te stijgen.

Het hoofdstuk presenteert vervolgens de modellen voor de dichotome variabelen episode overgang, gezichtspunt overgang, intervenïerende referenten en syntactische functie, zowele apart als in combinatie. Wanneer de factor episode de enige factor in een regressiemodel is, draagt deze *niet* significant bij aan de kans op herhaling van de eigennaam. Dit blijkt echter veroorzaakt te worden door de invloed van andere, belangrijkere factoren: zodra die in het model worden betrokken, verschijnt episode weer als een significante factor voor de kans op herhaling van de eigennaam.

De factor syntactische functie geeft een tegenovergesteld beeld: deze factor draagt significant bij aan de kans op eigennaam wanneer het de *enige* factor in een model is, maar verliest zijn voorspellende waarde wanneer andere factoren in het model voorkomen. Dit betekent dat factoren die vaak tegelijkertijd voorkomen met niet-subject functie, zoals intervenïerende referenten, de tendens bepalen van het samen voorkomen van niet-subject functie en herhaalde eigennamen. Dat wil zeggen, het is niet de syntactische functie *zelf* die de referentiële vorm bepaalt. Een verklaring voor dit gegeven zou kunnen zijn dat zowel subject functie als pronominalisatie manieren zijn om prominentie aan te geven.

De factoren gezichtspunt overgang en intervenïerende referenten blijken significant bij te dragen aan de kans dat de verteller een eigennaam herhaalt, zowel wanneer de factoren als enige factor gemodelleerd worden, als wanneer ze samen met andere factoren in een model voorkomen.

Uit de analyse blijkt verder dat het afstandsmodel enkele van de dichotome factoren verklaart en vice versa. Om die reden is het noodzakelijk zowel de continue afstandsfactor als de dichotome discourse-structuur variabelen in een enkel model te vatten, om zo hun individuele bijdrage in te kunnen schatten.

Het laatste model bevat dan ook alle significant gebleken factoren, d.w.z. referentiële afstand, episode overgang, gezichtspunt overgang en intervenïerende referenten. Het model 'ontwart' de bijdrage van de individuele factoren, en al deze factoren blijven in dit model significant bijdragen aan de kans op eigennaam. Dit model wordt dan ook aangenomen als het bruikbaarst voor het inschatten van de kans dat een verteller op een bepaald moment tijdens de productie van de tekst, opnieuw een eigennaam zal gebruiken. Op basis van het uiteindelijke model kunnen we een goede voorspelling doen van de referentiële keuze op een bepaald moment in

de tekst, gegeven de factoren die op dat moment aan de orde zijn. Daarmee geeft dit model aan wat voor de verteller de belangrijkste factoren zijn voor her herhalen van de eigennaam, danwel het continueren van een *default* pronomen.

Conclusie

Hoofdstuk 7 presenteert de conclusies van het onderzoek. De prominentie kenmerken van de referentiële categorieën eigennaam en pronomen, samen met de conceptuele structuur van de narratieve contexten waarin de referenten voorkomen, verklaart het afwisselend gebruik van eigennamen en pronomina in opeenvolgende verwijzingen naar personages.

Het voorstel voor referentiële keuzes in opeenvolgende verwijzingen luidt als volgt: Allereerst kan het gebruik van pronomina beschouwd worden als de *default* keuze voor topic referenten zoals hoofdpersonen in narratieve teksten, hetgeen in overeenstemming is met de pragmatische 'quantity maxims' van Grice (1975), en het 'least effort' principe van Zipf (1949). De hier beschreven factoren kunnen de prominentie van topic referenten doen afnemen, en het gebruik van herhaalde eigennamen oproepen. Een verteller kan eigennamen herhalen wanneer ze een verminderde activatie van de referent voor de lezer verwacht, of wanneer ze de referent zo wil presenteren met het oog op het aangeven van de tekststructuur.

Op basis van de analyse komen twee tendenzen naar voren: er is een onafhankelijke invloed van referentiële afstand op de keuze tussen eigennaam en pronomen, resulterend in een patroon ('ritme') van afwisselend eigennamen en pronomina, hetgeen verband zou kunnen houden met de fluctuatie van concept-activatie in de tijd; er is daarnaast ook een tendens om eigennamen te herhalen na tekststructurele breuken, waarbij herhaalde eigennamen wellicht zelf bijdragen aan het signaleren van de tekststructuur. Deze lineaire en hierarchische mechanismen, afstand en structuur, hebben ieder een onafhankelijke invloed, maar het effect van beiden kan verklaard worden door hetzelfde verschijnsel van *prominentie* van referenten.

Curriculum Vitae

Sarah van Vliet was born in Haarlem on August 4 1972. She attended Gymnasium in Gouda (Coornhert Gymnasium) and Zeist (K.S.G. de Breul). She briefly studied History of Art at the University of Amsterdam, and also briefly stayed in Granada, Spain. In 2000 she obtained her M.A. (cum laude) in English Language and Literature at the University of Amsterdam, with a specialization in linguistics. From 2000 she was employed as AiO at the discourse studies department of Tilburg University.

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Sarah van Vliet

Proper Nouns and Pronouns

The production of referential expressions in narrative discourse

In consecutive references to narrative characters, narrators usually alternate between the use of proper nouns and pronouns. This study aims to provide a comprehensive and cognitively plausible account of reference maintenance in online narrative discourse production.

The corpus research reported in this study offers an analysis of the grammatical and discourse factors affecting referential choice in narrative discourse production. The analysis is based on a large corpus of written narratives, elicited through visual stimuli (a comic). The results of the quantitative analyses indicate that in the maintenance of reference to narrative characters, the choice between proper nouns and pronouns is guided by two mechanisms: an independent distance-based alternation of proper nouns and pronouns, and the repetition of proper nouns after discourse-structural boundaries. These linear and hierarchical factors can be assumed to exert their influence through the fluctuation of (assumed) referent salience. The relation between context factors and referential form stems from the salience characteristics inherent in the nominal categories proper noun and pronoun, which accounts for reference maintenance at both the clause and the discourse level.

Proper Nouns and Pronouns should be of interest to researchers working in the fields of text linguistics, cognitive linguistics and psycholinguistics.

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